INDEX OF SUBJECTS.

ABSTRACTS A & C 1944.

An asterisk denotes a previous abstract. Patents are marked (P.).

Α.

ACTH. See Hormones, adrenocorticotropic. A.T.10, effect of, on otosclerosis, A., III, 26. toxicity of, for chicks, A., III, 424. See also Dihydrotachysterol. Abdomen, concussion of, hydraulic, A., III, 193. operations on, nausea and vomiting during, effect of preoperative narcotics on, A., III, 495. pain in, chronic, due to hypoglycamia, A., III, 12. in cyclic vomiting, A., III, 473. radiology of, A., III, 137. upper, operations on, use of anæsthetics in, and effect on vital capacity, A., III, 245. visceral lesions of, associated with liver disease, A., III, 413. wall of, surgery of, anæsthesia for, A., III, 429. Abietic acid, crystal structure of, A., I, 30. dipole moment of, A., I, 29. hydrogenolysis of, A., II, 255 Abortion, endocrinology of, A., III, 812. habitual, treatment of, with progesterone, A., III. 110. incomplete, diagnosis of, vaginal smear in, A., III, 111. spontaneous, serological factors as causes of, A., III, 241. treatment of, with pregneninolone, A., III, 737. Abrasive materials, particle size distribution in, C., 54. Abrine, prevention with, of cataract, tryptophan-deficient diet, A., III, 197. Abscesses, breast. See under Breast. cerebral. See under Cerebrum. lung. See under Lungs. Absorptiometers, photo-electric, determination of hamoglobin by, C., 76. Absorption, dependence of, on pH and cation concentration, A., I, 200. ultra-violet, apparatus for measuring, C., 149. Absorption spectra. See under Spectra. Acacia, isolation from, of β -phenylethylamine, A., II, 354. of tryptamine, A., II, 354. treatment with, in renal cedema, A., III, 173. Acacia melanoxylon, roots, culture of, A., III, Acanthite, crystal structure of, A., I, 92.

Acardius amorphous, A., III, 786.

See also Batteries, storage.

Acetal, hydrolysis of, A., I, 19.

geometric isomerism of, A., II, 23.

Acetals, bromo-, synthesis of, A., II, 248. Acetaldehyde, metabolism of. See

105.

Metabolism.

Metabolism.

252.

Accumulators, lead, piezodynamics of, A., I,

Aceconitic acid, and its barium salt, A., II, 194.

Acenaphthene, metabolism of. See under

2-(5'-Acenaphthyl)quinoline, and its picrate, A., II, 379.

Acetals, cyclic, from polyhydric nitroalcohols,

polymerisation of, at low temperatures, A., I,

See under

plates of, determination in, of barium sulphate, C., 59.

Acetaldehyde, reaction of, with ethyl bromide, [A., I, 157. thermal decomposition of, A., I, 204. See Acetaldehydophenylalanylhistamine. Cinnamylhistamine, a-amino-, acetyl deriva-Acetamide, diamagnetic susceptibility of, A., I, 121. Acetamide, p-amino-, and p-nitro-, and their derivatives, A., II, 242. Acetanilide, derivatives of, A., II, 127. effect of, on methæmoglobin formation, A., III, 136. Acetanilide, p-chloro-, synthesis of, A., II, 157. N-β-Acetatomercnri-γ-methoxypropyl-phthalimide, A., II, 243. N-Acet-N-benzylamidomethylphenyltrimethylammonium chloride, A., II, 46. Acet-D-glucofuranosylamide, and its tetra-Oacetate, A., II, 327. Acet- β - Δ ¹-cyclohexenyl- β -phenyl-n-amylamide, A., II, 47. Acetic acid, brassidyl and erucyl esters, ozonisation of, A., II, 319. carboxy-labelled, rôle of, in liver-glycogen production, A., III, 130. cetyl ester, electrophoresis of emulsions of, A., I, 102. degradation of, biologically, A., III, 369, 677. destruction of, in heart, A., III, 525. detection of, C., 119. deuterium salt, dimeride of, electron diffrac-tion by, A., I, 195. p-diphenylyl ester, nitration of, A., II, 367. dissociation constant and pH titration curves of, A., I, 102. equilibrium of, with acetone, chloroform, and water, A., I, 155. with ammonia, A., I, 225. with sulphur dioxide, A., I, 225. with p-toluidine, A., I, 154. with trimethyl phosphate, A., I, 127. Δβ-n-heptinenyl ester, A., II, 29. lead salt, oxidations with, in sugar group, A., II, 7, 210, 214, 327. lead subsalt, specification for, C., 196. nickel salt, spectrum of, absorption, A., I, 275. oxidation of, in animal tissue, A., III, 276. polymerides of, electron diffraction by, A., I, production of, in alimentary canal, A., III, sodium salt, refractive index of, and of its mixtures with aluminium nitrate, A., I, 16. ultrasonic wave velocity in mixtures of, with water, A., I, 33. use of, for fatty acid synthesis, A., III, 755. Acetic acid, chloro-, 2:6-dichloro-I-phenyl ester, A., II, 128. determination of, in wines, C., 32. sodium salt, elimination of chlorine from, A., I, 41. dichloro-, 2:6-dichloro-1-phenyl ester, A., II, 128. trichloro-, tert.-butyl ester, A., II, 318. 2:6-dichloro-1-phenyl ester, A., II, 128. chloronitro-, ethyl ester, A., II. 358.

cyano-, condensation of, with ketones, A., II,

trifluoro-, polymerides of, electron diffraction by, A., I, 195.

Acetic acid, halogeno-derivatives, hydrolysis of, Brönsted relation in, A., I, 41. iodo-, p-diphenylyl ester, A., II, 97. effect of, on small intestine of rabbit, A., III, 34.thiol-, sodium salt, for testing disinfectants, A., III, 56. Acetic anhydride, ignition and inflammability of, A., I, 87. 2-Acetnaphthalide, 1-chloro-5-, -6-, and -8-nitro-, A., II, 275. Acetoacetic acid, amides, substituted, chloroderivatives, replacement of chlorine in, A., I, 227. chloro- and sonitro-derivatives, absorption spectra of, A., I, 211. hydrolysis of, A., I, 227. reaction of, with nitrosyl chloride, A., II, spectra of, absorption, A., I, 116. y-butyl ester, semicarbazone of, A., II, 120. esters, allyl-type, A., II, 32. ethyl ester, condensations of, by means of sodium or potassium amide and magnesium isopropyl bromide, A., II, with 2-chloro-m-5-xylenol, A., II, 302. diphenylenehydrazone, A., II, 83. ketals of, A., II, 34. Acetoacefic acid, γγγ-trichloro-, ethyl and methyl esters, and their derivatives, A., II, 319. Acetoacet-a-naphthalide, y-chloro-, A., II, 158. Acetoacet-a- and -\beta-naphthalides, oximino-, A., II, 157. Acetoacet-o- and -p-toluidides, oximino-, A., II, Acetoacet-m-4-xylidide, y-chloro-, and oximino-, A., II, 158. 4-Acetoacetyl-m-5-xylenol, 2-chloro-, A., II, 303. Acetobacter, gluconic acid formation by, A., III, Acetobacter suboxydans, fermentation by, of butane- β_{γ} -diols, A., III, 771. glycerol conversion by, A., II, 321. nutrition of, with lucerne extracts, A., III, Acetobromomesitylene, ω-chloro-, A., II, 132. Acetosodurene, ω-chloro-, A., II, 98. Acetoin, detection of, in culture media, and its production, A., III, 694. determination of, in blood, colorimetrically, C., 27. toxicity of, A., III, 136. Acetomesitylene, 3-nitro-, A., II, 310. Acetone, absorption of, by β -methylcellobiose heptanitrate, and β -methylglucose tetranitrate, A., I, 283. condensation of, with benzaldehyde, A., I, 42. detection of, C., 118. in presence of aldehydes, C., 117. determination of, C., 191. in blood, C., 76. diphenylenehydrazone, A., II, 83. equilibrium of, with acetic acid, chloroform, and water, A., I, 155. with benzene and water, A., I, 275. in tissue staining, A., III, 161.

peroxide, termolecular, in isopropyl ether, A.,

photochemical decomposition of, A., I, 229.

its

Acetone, spectrum of, absorption, ultra-violet, and of hexadeuteracetone, A., I, 264.

ultrasonic wave velocity in mixtures of, with water, A., I, 33.

Acetone, s-dibromo-, chloro-, and s-dichloro-, ethylene ketals of, A., II, 33. as-dinitro-, p-nitrophenylhydrazone, A., II,

203. p-Acetonesulphonylphenylarsonic acid, A., II,

283.Acetonitrile, trichloro-, determination of, C., 138.

4-Acetonylcoumarino-4':3'-2:3-benz-4-pyrone, A., II, 345.

S-Acetonylthioacetanilide hydrochloride, A., II, 112.

p-Acetonylthiolphenylarsonic acid, A., II, 283. Acetophenetidide, effect of, on methæmoglobin formation, A., III, 136.

Acetophenone, electrolytic reduction of, in alkaline solution, A., II, 218.

Acetophenone, p-amino-, methæmoglobinæmia after administration of, A., III, 609. 3:4-diamino-, A., II, 297.

bromo- and chloro-, ethylene ketals of, A., II, 33.

w-chloro-ωω-difluoro-, and ωω-dichloro-ωfluoro-, A., II, 102.

3:5:a-trichloro-4-hydroxy-, and its 2:4-dinitrophenylhydrazone, A., II, 128.

3:5: aa-tetrachloro-4-hydroxy-, A., II, 128. ω-difluoro-, 2:4-dinitrophenylhydrazone, A., II, 102.

fluoro-derivatives, A., II, 102. 3-nitro-4-amino-, A., II, 296.

Acetophenone-γ-chloro-aβ-propylene ketals, A., II, 33.

Acetoxime, dissociation constant of, A., I, 224. 2-Acetsulphanilimido-3-acetsulphanilylthia-

zolone, A., II, 279. Acetyl bromide, hydrolysis of, A., I, 65. bromide, bromo-, hydrolysis of, A., I, 65. chloride, nitro-, A., II, 357. fluoborate, A., II, 246.

phosphate, A., II, 359.

N-Acetyl-N¹-acetoxymethylcarbamide, A., II, 239.

1-Acetyl-3-acetoxy-5-phenylpyrazole, A., II, 58. 1-Acetyl-5-acetoxy-3-phenylpyrazole, A., II, 58.

2-Acetyl-3-acetoxy-1-phenyl-43-pyrazoline, 5-imino-, 5-acetyl derivative, A., II, 144.

β-Acetylacrylic acid, ethyl ester, semicarbazone, A., II, 147.

2-Acetylanhydrasumaresinolic acid, methyl ester, A., II, 109.

N-Acetyl- α -p-anisylethylamine, A., II, 48. N-Acetyl-a-p-anisylpropylamme, A., II, 48.

Acetylarsan, treatment with, of syphilis in children, A., III, 136.

5-Acetylaziminobenzene, and its 2:4-dinitrophenylhydrazone, A., II, 297.

6-Acetylbenzazimidol, and its 2:4-dinitrophenylhydrazone, A., II, 297.

5-Acetylbenzoic acid, 2-hydroxy-, methyl ester, and its 2:4-dinitrophenylhydrazone, A., II, 296.

1-Acetyl-5-benzoyloxy-3-phenylpyrazole, A., II,

Acetylbetulic acid, degradation of, to acetoxybisnorlupandicarboxylic acid, A., II, 108.

Acetylbisnorlupanoldicarboxylic anhydride, A., II, 108.

N-Acetyl-sec.- ψ -brucine, A., II, 175.

y-Acetylbutyric acid, ethyl ester, ethylene ketal of, A., II, 34.

N-Acetyl-N1-butyroxymethylcarbamide, A., II, 239.

Acetylchloroacetamide, trichloro-, A., II, 358. Acetylcholine, action of, effect of chlorine addition to side-chain on, A., III, 134.

on nervous activity, A., III, 177. action of X-rays on solutions of, A., III, 63. amphomimetric action of, A., III, 607. atropine and curare as antagonists of, A., III,

7**5**9. determination of, in body fluids, C., 92 distribution of, in brains of rats of different ages, A., III, 401. electrical activity of, A., I, 40.

Acetylcholine, formation of, effect of glutamic acid on, A., III, 129.

in anaphylaxis, A., III, 704. in chick embryo, A., III, 3.

in muscle, A., III, 580.

level of, in rat cerebral cortex in anoxia and hypoglycamia, A., III, 179.

liberation of, in nerve section after stimulation, A., III, 18.

nerve activity and, A., III, 19.

reaction of, with choline-esterase and eserine, A., III, 766.

removal of, by choline-esterase injections, and its effect on nerve impulse transmission, A., III, 246.

treatment with, of varicose ulcers, A., III, 13. a-N-Acetylchondrosamine hydrate, A., II, 249. m-Acetyldeoxybenzoin, and its dioxime, A., II,

2-Acetyl-2-devinylphyllochlorin, methyl ester, and its oxime, A., II, 312.

partial synthesis of, A., II, 312.

N-Acetyl-ay-di-p-anisylpropylamine, A., II, 48. 6-Acetyl-1:2-3:4-dibenzophenazine, A., II, 297. 8-Acetyl-2:4-diethylresorcinol, A., II, 191.

6-Acetyl-4:7-dimethylcoumarin, 5-hydroxy-, A., II, 270. 3-Acetyl-2:4-dimethyl-5-ethylpyrrole, A., II, 377.

5'-Acetyl-4:6'-dimethyl-1':4'-pyrono-5':6'-8:7coumarin, A., II, 200.

3-Acetyl-2:4-dimethylpyrrole-5-carboxylic .acid, oxime, ethyl ester, A., II, 377.

5-Acetyl-2:4-dimethylpyrrole-3-carboxylic acid, oxime, ethyl ester, A., II, 377.

6-Acetyl-2:3-dimethylquinoxaline, A., II, 297. N-Acetyl-ay-diphenylpropylamine, A., II, 48. 6-Acetyl-2:3-diphenylquinoxaline, A., II, 297.

Acetylegonol, 4-bromo-, and 3-nitro-, A., II, 167. 4-bromo-3-nitro-, A., II, 167. N-Acetylemetine, and its derivatives, A., II, 282.

Acetylene, co-polymerisation of, with butylenc, in electric discharge, A., II, 357.

derivatives, A., II, 118, 302, 322. determination of, in air, C., 20.

with silver nitrate, C., 20. flames, hydroxyl in, A., I, 19.

mixed with air, electric discharge in, A., I, 116.

hydrogenation of, on palladium, A., I, 108. mercury derivatives of, properties and structure of, A., II, 148.

oxidation of, catalytic, on active manganese dioxide, A., I, 108.

polymerisation of, mercury-photosensitised, A., I, 181.

photochemical, A., I, 132, 229.

reaction of, with hydrogen, metal-catalysed, A., I, 254.

thermal reactions of, A., I, 179.

Acetylenes, catalytic hydrogenation of, to olefines, A., II, 29.

in the C₆ alicyclic series, A., II, 327.

spectra of, Raman, A., I, 3, 213.

substituted, and their derivatives, A., II, 29, 358.

Acetylenic halides, spectra of, Raman, A., I,

Acetylenylglycols, from polyene aldehydes, and their rearrangement with acids, A., II, 177.

12-Acetylfluoranthene, and its derivatives, A., II. 379.

9-Acetylfluorene, and its derivatives, A., II, 261. N-Acetyl-D-glucofuranosylamine, preparation and structure of, A., II, 327.

a-Acetylglutaric acid, diethyl ester, ethylene ketal of, A., II, 34.

methyl ethyl ester, γ-chloro-af-propylene ketal of, A., II, 34.

1-Acetylhomomeroquinene, 10-amino-, derivatives of, and 10-oximino-, ethyl ester, A., II, 314.

Acetyl-lupanoldicarboxylic acid, A., II, 108. Acetyl-Inpenalolic acid, A., II, 108.

Acetyl-lycorenine, A., II, 63.

ε-Acetyl-l-lysine, availability of, for growth, A., III, 490.

4-Acetyl-3-methoxybenzfuran, 5-hydroxy-, and its ethyl ether, A., II, 199.

4-Acetyl-4-(2'-methoxyphenyl) -1-methylpiperidine, A., 11, 272.

3-Acetyl-6-methoxyrubanol, and its derivatives, A., II, 355.

5-Acetyl-8-methoxy-1:2:3:4-tetrahydronaphthalene, oxime, A., II, 221.

5-Acetyl-8-methoxy-1:2:3:4-tetrahydronaphthalene, 5-bromo-, and 5-hydroxy, 5-acetyl derivative, A., II, 221.

5-Acetyl-1-methylaziminobenzene, A., II, 297. 5-Acetyl-2-methylbenziminazole,

2:4-dinitrophenylhydrazone, A., II, 297. Acetylmethylcarbinol. See Acetoin.

N-Acetyl-a-methylchondrosamide, and trimethyl derivative, A., II, 249.

5-Acetyl-3-methylcoumarone, 4-hydroxy-, and its derivatives, A., II, 200.

5-Acetyl-3-methylcoumarone-4-carboxylic acid, methyl ester, A., II, 200.

dl-N-Acetyl-S-methylcysteine, A., II, 250.

1-N-Acetyl-S-methylcysteine, A., II, 250.

1-Acetyl-8-methyldecahydroisoquinoline, 7-hydroxy-, A., II, 314.

6-Acetyl-2-methyl-4--dihydropyran, semicarbazone, A., II, 198.

2-Acetyl-2-methylcyclohexanone, A., II, 213. y-Acetyl- δ -methyl-n-pentan- β -one, A., II, 213.

3-Acetyl-2-methylquinoline, 2:4-dinitrophenyl-hydrazone and picrate of, A., II, 308. 2-Acetyl-6-methyltetrahydropyran, and p-methoxybenzylidene derivative and semi-

carbazone, A., II, 198. 1-Acetyl-8-methyl-1:2:3:4-tetrahydroisoquinoline, 7-hydroxy-, A., II, 314.

8-Acetyl-4-methylumbelliferone, acetate, A., II, 200.

Acetylmorphine, analgesic effect of, A., III,

N-Acetyl-N'-morpholinomethylcarbamide, II, 239.

2-Acetylnaphthalene, condensation of, with diethyl succinate, A., II, 337. 4-Acetyl-1-p-nitrophenyl-5-phenoxymethyl-

pyrazole-3-carboxylic acid, A., II, 236. Acetylnorlupandiolic acid, A., II, 108.

9-Acetyloctahydroanthracene, and 9-trichloro-, A., II, 330.

1-Acetyl-4-a-oximmoethyl-1:4-dihydropyridine, A., II, 204. Acetyl-dl-phenylalanylhistamine, A., II, 83.

Acetylphenylalanylphenylalanine, A., II, 99. N-Acetyl- α -phenyl- γ -p-anisylpropylamine, II, 48.

N-Acetyl- γ -phenyl-a-p-anisylpropylamine, II, 48.

β-p-Acetylphenylethane, and its 2:4-dinitro-phenylhydrazone, A., II, 297.

4-Acetyl-1-phenyl-5-methyl-1:2:3-triazole, its 2:4-dinitrophenylhydrazone, A., II, 145. 5-Acetyl-3-phenylisooxazole, and its p-nitro-

phenylhydrazone, A., II, 238. -p-Acetylphenylpropane, α-nitro-, and 2:4-dinitrophenylhydrazone, A., II, 297. and

p-Acetylphenylpropionic acid, and its derivatives, A., II, 297.

 β -p-Acetylphenylpropionitrile, its 2:4-dinitrophenylhydrazone, A., II, 298.

1-Acetyl-5-phenylpyrazole, 3-hydroxy-, A., II,

4-Acetyl-1-phenylpyrazoline, 5-imino-3hydroxy-, and its 3-acetate, A., II, 144.

4-Acetyl-1-phenyl-1:2:3-triazole, and 2:4-dinitrophenylhydrazone, A., II, 145. β-Acetyl-δε-isopropylideneascorbic acid, A., II, 182.

3-Acetyl-2-pyridylindoxyl, A., II, 277. 2-Acetylpyrrole, 2-chloro-, A., II, 170.

2-hydroxy-, 2-acetate, A., II, 170.

2-Acetylpyrrolidinoacetic acid, hydrochloride, and its 2:4-dinitrophenylhydrazone, A., II, 87. 3-Acetylquinoline-2-carboxylic acid, ethyl ester, A., II, 307.

Acetylsalicylic acid, spectrum of, Raman, A., I, 165.

See also Aspirin.

4-Aeetylsalicyloxy-3-phenylcoumarin, A., II, 345.

N-Acetyl-sec.-ψ-strychnine, A., II, 174.

178 a-Acetylsuccinic acid, diethyl ester, ethylene ketal of, A., II, 34. N1-Acetylsulphanilamide, A., II, 365. 5-N4-Acetylsulphanilamidoindazole, A., II, 25. 3-N4-Acetylsulphanilamidoindotriazine. $3-N^4$ -Acetylsulphanilamido-1:2:4-triazacarbazole. 2-N4-Acetylsulphanilamido-4-methylthiazole, 2-N4-chloro-, and its glycyl derivative, A., II, 2-N4-Acetylsulphanilamidopyridine, 2-N4-chloro-, and its glycyl derivative, A., II, 277. 2-N4-Acetylsulphanilamidopyrimidine, 2-N⁴-chloro-, and its glyeyl derivative, A., 2-N4-Acetylsulphanilamidothiazole, 2-Na-chloro-, and its glycyl derivative, A., II, 277. μ -2-N4'-Acetylsulphanilamido-4-thiazyl-ndodecoic acid, A., II, 313. 3-N4-Acetylsulphanilamido-1:2:4triazacarbazole, A., II, 25.
Acetylsulphanilyl chloride, determination of, C., 168. Acetylsulphanilylguanidine, A., II, 127; III, 2-Acetylsumaresinolic acid, methyl and ethyl esters, A., II, 109. x-Acetylsumaresinolic acid, methyl ester, A., II, a-Acetylthiol-α-phenylacetone, A., II, 372. N-Acetyltrimethyl-β-methylchondrosaminide, A., II, 249. Acetyltrinorlanosteric acid, methyl ester, A., II, O-Acetyltyrosine, and its methylester, and their hydrochlorides, A., II, 324. Acetylursolic acid, oxidation of, A., II, 53. a-Acetyl-y-valerolactone, aδ-dichloro-, A., II, 3-Acetylvisnagin, A., II, 199. Achlorhydria, biology of, in relation to anæmia, A., III, 473. Achromobacter fischeri, glucose assimilation and oxidation by, in presence of inhibitors, A., 111, 845. luminous variant of, A., III, 145. Achromotrichia, hormones and vitamins in relation to, A., III, 824. treatment of, liver and yeast factors in, in dogs on synthetic diets, A., III, 671. Achylia pancreatica, relation of, to meconium ileus, A., III, 657.

Acids, acetylenic, esters, reaction of, with sodium triphenylmethyl, A., II, 133. aliphatic, a-alkylthiol, A., II, 151. mono- and di-basic, lignin esters of, A., II, carboxylic, liquid-crystalline state of, A., II. 179. dicarboxylic, dithioamides of, reactivity of, A., II, 280. esters of, A., II, 3. glycidyl esters, A., II, 90. aliphatic and aromatic, arylamides of, rearrangement of, by aluminium chloride, A., II, 263. monobasic, dissociation constants of, A., I, 37. dibasic, dissociation constants of, in relation to acid strength, A., I, 126. carboxylic, characterisation of, as carbodiimides, A., II, 106. dissociation constants of, effect of substitution on, A., I, 224. polynuclear, esters, A., II, 15. reactions of, in aqueous solutions, A., II, 119. monocarboxylic, dissociation constants and strengths of, in aqueous acetone and aqueous sucrose, A., I, 281. dicarboxylic, derivatives of, spectra Raman, A., I, 97. reaction of, with aromatic diamines, A., II, 277.

definition of, A., I, 126.

determination of, by electrometric titration,

III, 308.

Acraldehyde, dimeric, A., II, 198.

Acids, determination of, in coloured materials, potentiometrically, C., 203. dimerisation of, A., I, 281. dissociation of, thermodynamics of, A., I, 249. electrolytsis of, current decrease during, A., I, 226. esterification of, catalysed by acid chlorides, A., II, 179. fatty, branched-chain, A., II, 181. conjugation in, determined by absorption spectra, C., 166. cryoscopy and surface activity of, in benzene solutions, A., I, 171. cyclic, A., II, 99. deficiency of, in mouse, A., III, 485. determination of, in cotton-seed oil, C., 74. essential, in nutrition, A., III, 352. fish oils as source of, A., III, 128. esters, analysis of, by means of refractive index, A., I, 118; C., 117. higher, constitution diagram of, and of their triglycerides, A., I, 17, 85. saturated, digestibility of, A., III, 42. in human milk fat, A., III, 740. liquid, refractive index of, nomograph for, A., I, 80. long-chain, methylated, cellular response to, Ă., III, 136. mixed, binary, solidification point of, A., I, 104. of human depot fat, A., III, 348. oxidation mechanism of, A., III, 676. permeability of films of, to ions and molecules, A., I, 152. saponification of, in mineral oils, A., I, 201. saturated, formation of, in organism, compared with oleic acid, A., III, 51. short-chain, andtheir trigly cerides, absorption of, effect of adrenalectomy on, A., III, 534. synthesis of, from carbohydrate precursors, rôle of thiamin in, A., III, 672. use of acetic acid for, A., III, 755. titration of, indicator for, C., 195. turnover of, in obese mice, A., III, 357. volatile, determination of, in blood, C., 174. heterocyclic, iron derivatives of, A., II, 111. inorganic, oxygen, dissociation constants of, A., I, 16. long-chain, containing quaternary carbon atom, A., II, 69, 180. mixed, specific heat of, A., I, 8. organic, adsorption of, on silica gel, A., I, 123. degradation of, by bacteria, A., III, 695. detection of, by partition method, A., II, 2; C., 194. determination of, in plant sap, C., 90. oxygen-active, autoxidation of, A., II, 360. phenolic. See Phenolic acids. strengths of, in selenium oxychloride, A., I, 130. volatile, absorption of, from sheep rumen, A., III, 35. weak, dissociation constant of, A., I, 224. Acid amides. See Amides. Acid anhydrides. See Anhydrides. Acid-base balance, in gases, A., I, 175. Acid chlorides, fatty, unsaturated, preparation of, A., II, 211. Acid halides, sterically-hindered, reaction of, with magnesium methyl iodide, in presence of metallic halides, A., II, 223. Acidosis, diabetic, effect on, of glucose, A., III, Acne, halowax, in electricians, A., III. 283. treatment of, with vitamin-A, A., III, 602. Acne conglobata, with perianal pyoderma, treatment of, with low-fat diet and thyroxine, A., III, 184. Acne vulgaris, treatment of, with serum, A., III, 591. Aconitase, A., III, 64. Aconite, physiological effects of, in relation to atisine, A., III, 556. Aconite alkaloids, A., II, 206, 355. Acorns, red- and white-oak, respiration of, A.,

Acridan-5-carboxylic acid, β -diethylaminoethyl ester, hydrochloride, A., II, 16. Acridine, antiseptic action of, A., III, 607. derivatives, antibacterial and toxic action of, A., III, 493, 552. spectra of, fluorescence, A., I, 164. Acridine, I., 3., and 4-amino-, benzylidene derivatives, 2-amino-, salicylidene derivative, 3:5-diamino-, 4-hydroxy-3-nitro-5-amino-, hydrochloride, A., II, 24. 5-amino-, acetyl derivative, A., II, 24. 2:8-diamino-. See Proflavine. Acridines, protection with, against influenza virus, A., III, 829. reduction potentials of, and therapeutio activity, A., I, 251. Acridines, amino-, nature of amino-group in, A., II, 24. partition and surface phenomena of, A., II, Aeridine-5-carboxylic acid, β-diethylaminoethyl ester, hydrochloride, A., II, 16. Acridine-7-carboxylic acid, 2-amino-, A., II, 24. Acridone-7-carboxylic acid, 2-nitro-, A., II, 24. Acrolein. See Acraldehyde. Acrylacetic acids, β -substituted, esters, A., II, Acrylic acid, n-alkyl esters, preparation and properties of, A., II, 318. β -alkoxyethyl and β -tetrahydrofurfuryl esters, A., II, 319. cyanomethyl ester, A., II, 213. phenyl and a-tolyl esters, preparation of, A., II, 217. Acrylonitrile, A., II, 185. determination of, in air, C., 88. Actinium, disintegration of, y-rays from, A., I, 188. recoil particles from, A., I, 188. β-rays of, A., I, 188. γ-rays from ,A., I, 188. Actinium-K, γ -rays from, A., I, 188. Actinometer, uranyl oxalate, use of, for rubber testing, C., 172. Actinomyces, classification and nomenclature of, A., III, 142. inhibition by, of fungal growth, A., III, 291. thiamin formation by, A., III, 142. Actinomyces calicolor, pigments produced by, A., III, 69. Actinomyces griseus, streptomycin from, A., III, 502. Actinomyces israeli, cultivation, isolation, and pathogenicity of, A., III, 841. Actinomyces lavendulæ, metabolism and streptothricin formation in, A., III, 142. Actinomyces violaceus-ruber, pigments produced by, A., III, 69. Actinomyces viridochromogenus, thiamin formation by, A., III, 142. Actinomycin, effect of, on staphylococcal toxin, A., III, 76. Actinomycosis, pulmonary, treatment of, with sulphanilamide, A., III, 54. with fistula, treatment of, with sulphonamides, A., III, 54. tongue, treatment of, with sulphonamides, A., III, 54. treatment of, with sulphapyrimidine, A., III, Activation energy, isodielectric, A., I, 286. Active substances, A., I. 37, 145, 157. Activity coefficients, Debye-Huckel constants for, A., I, 17. Acyl peroxides, optically active, preparation, decomposition, and use of, as catalysts for vinyl polymerisation. A., II, 15. Acylarylamides, N-nitroso-, use of, as catalysts in addition polymerisation, A., II, 120. 9-Acylfluorenes, vinylamines from, A., II, 260. Acyloxyazo-compounds, analysis of, spectroscopic, A., II, 192. Adaptation, dark. See under Eyes. Addison's disease, associated with primary amenorrhœa, A., III, 109. carbohydrate, mineral, and nitrogen meta-bolism in, effect of testosterone and its derivatives on, in girl, A., III, 187.

Addison's disease, compact thyroidism, A., III, 186. complicated by hyper-

treatment of, with acetate, A., III, 465. deoxycorticosterone

with testosterone propionate, A., III, 807. with myocardial changes of potassium deficiency, heart failure in, A., III, 808. with partial absence of adrenal cortex and

gynecomastia, A., III, 589. Adelina deronis, chromosome cycle and life history of, A., III, 319.

Adenine, detection of, in casein, C., 133. nucleotides, crystalline, isolation of, A., II, 61. flavin, enzymic synthesis of, A., III, 273.

isolation of, A., II, 61. phosphate rejuvenation in, A., III, 755.

Adenine-thiomethylpentose, pharmacology of, A., III, 210.

Adenocarcinoma, duodenal. Duodenum.

kidney. See under Kidneys.

mammary. See under Glands, mammary transplantable, growth of, in mice, A., III, 39.

Adenocarpus intermedius, alkaloids in, A., II, 207.

Adenoma, adrenal. See under Adrenals. anterior lobe, cell proliferation in, in estradiol-treated rats, A., III, 747. chromophobe, A., III, 251. hypophyseal. See under Pituitary.

lesions like, growth of intraocular transplants from, A., III, 664.

testicular, tubular, benign and malignant, in female, A., III, 472.

Adenomatosis, pulmonary. See under Lungs. Adenopathy, tubercular, in children, A., III, 700.

Adenosine traphosphate, hydrolysis of, influence

of diphtheria toxin on, A., III, 275. in rat muscles, studied with radio-phosphorus, A., III, 458.

polyphosphates, relation of, to fatty acid oxidation in liver preparations, A., III, 742. Adenosinetriphosphatase, determination of, C.,

37. inactivation of, A., III, 613.

Adenosinetriphosphoric acid in liver, A., III, 539. Adenylpyrophosphatase, myokinase and, A., III,

Adipdithioamide, A., II, 213.

Adipic acid, α-cyano-, diethyl ester, and its dihydrazide, A., II, 91.

Adrenals, A., III, 653. adenoma of, removal of, with relief of Cushing's syndrome, A., III, 465.

as source of cortin-like material in monkey urine, A., III, 730.

ascorbic acid and cholesterol content of, effect of adrenotropic hormone on, A., III, 591.

changes in, after exposure to low oxygen

pressure, A., III, 653.
cholesterol metabolism of, and effect of
thyroid hormone thereon, A., III, 588.

deficiency of, and its effects on isolated rabbit intestine responses, A., III, 186.

effect on, of filtrate factor deficiency in rats, A., III, 535.

of methyltestosterone, A., III, 341. of stilbæstrol in rats, A., III, 108.

of testosterone propionate, A, III, 542, 741. function of, metabolic effects of thiouracil on, A., III, 589.

water intoxication in relation to, A., III,

water test of, A., III, 808.

grafts of, homoioplastic, to cerebral cortex in rats, A., III, 340.

growth of, in man, A., III, 385.

hæmorrhage of, bilateral. See Waterhouse-Friderichsen syndrome.

hormones of, action of, in ovipositor test, A., III, 738.

medullary, in rats, A., III, 578.

hypertrophy of, effect on, of acapnia prevention, A., III, 589.

of subdiaphragmatic vagotomy, A., III,

Adrenals, in carbohydrate metabolism of eviscerated rat, A., III, 534.

lipins of, in mice with high and low mammary tumour incidences, A., III, 161. preservation of, A., III, 93.

relation of, to pituitary, demonstrated by parabiosis, A., III, 590.

to pregnancy toxemia, A., III, 405. rôle of, in systolic blood pressure control in rats, A., III, 730.

volume of, in male rats with reduced glucose tolerance, A., III, 108.

Adrenal cortex, after hypophysectomy, effect of androgenic steroids on, in rats, A., III, 731. cancer of, in rabbits, A., III, 664.

steroid excretion in, A., II, 50.

cholesterol metabolism of, A., III, 186. constituents of, and their derivatives, A., II, 106, 140, 267, 341, 342.

effect of, on lactation, A., III, 341. cytogenesis of, in cats, A., III, 161.

deficiency of, effect of water-soluble deoxycorticosterone glucoside in, A., III, 187.

influence of, on histamine content of rat tissues, A., III, 186.

of pituitary origin, A., III, 28.

effect on, of carbon are irradiation, A., III, 534.

of vitamin-E free diet, A., III, 185. histophysiology of, A., III, 28.

hormones of, assay of, C., 176. by muscle-work test in adrenalectomised-

nephrectomised rat, A., III, 590. efficacy of, A., III, 28.

material like, in urine, A., III, 535. output of, in mammals, A., III, 534.

hypertrophy of, effect of acapnia prevention on, A., III, 589.

in relation to food consumption and serumalbumin metabolism in hypophysectomised rats, A., III, 108:

preparations of, effect of, in shock treatment in non-adrenalectomised dogs, A., III, 535. relation of, to diabetogenic effect of diethylstilbœstrol in rats, A., III, 251.

to fat metabolism, A., III, 407. secretion of, effect of, on lymphoid tissue and

antibody titre, A., III, 731. steroids of. See under Steroids.

tumours of, in castrated rat, A., III, 746. transplantable, in mice, A., III, 416.

water diuresis and intoxication in relation to, A., III, 731.

zona glomerulosa in, cell replacement and, in mammals, A., III, 712.

Adrenal cortex extracts, assay of, in adrenal-ectomised rats exposed to cold, A., III, 340. effect of, on renal functions, A., III, 596.

liver-glycogen storage potency of, relation of body weight to, A., III, 28.

protection with, of rats from lethal effects of water, A., III, 340.

treatment with, of shock, A., III, 28.

Adrenal medulla, removal of, water balance disturbances in rats after, A., III, 730.

Adrenalectomy, appetites and dietary selection" of rats after, A., III, 251. carbohydrate metabolism after, A., III, 251.

carbohydrate, salt, and water appetite after, effect of deoxycorticosterone on, in rats, A., III, 340.

effect of, on absorption of fatty acids and their triglycerides, A., III, 534.

on animal metabolism, A., III, 186. on blood-pyruvic acid in rats, A., III, 589. on cytochrome-c and -oxidase, in rats, A., III, 589.

growth of rats after, effect of 17-hydroxy-11dehydrocorticosterone on, A., III, 534. heat production in, in pigeons, A., III, 730. lactoflavin elimination after, A., III, 186. mammary structure after, in rats, A., III,

472.stored fat mobilisation from fat diets in relation to, A., III, 407.

treatment with, for phæochromocytoma causing paroxysmal hypertension, A., III, 808.

Adrenalectomy, working capacity of animals after, effect of cortin and deoxycorticosterone on, A., III, 187.

Adrenaline, activity of, in solution, biological assay of, C., 136.

administration of, sulphate excretion after. A., III, 407.

and calorigenic response to. subcutaneously administered in rats, A., III, 250.

blood level of, in clinical and experimental conditions, A., III, 796.

derivatives, o-quinonoid, antipressor action of, in hypertension in rats, A., III, 16. determination of, by persulphate reaction,

C., 176. effect of, on blood pressure in bronchial

asthma, A., III, 134. on cell oxidation, A., III, 589.

on hæmodynamics of kidneys in frogs, A., III, 414.

on heat formation in frog's liver, A., III, 28.

on intestines, abolition of, A., III, 589. on small blood vessels of rabbit's ear, A.,

III, 639. on venous hæmatocrit value of dogs, A.,

III, 8.

electrical activity of, A., I, 40.

gelatin-urea solution of, for prolonged action, A., III, 730.

glycerin solution of, inhalation of, in asthma, A., III, 730.

in blood and tissues, A., III, 28.

in relation to death of athlete, A., III, 108. inactivation of, effect of temperature on, A.,

injection of, intraosseous, A., III, 108.

misuse of, during ether anæsthesia, A., III, 808.

oxidation of, inhibition of, by malonic acid, A., III, 250. oxidation products of, analysis of, chromato-

graphically, C., 93. pathogenic significance of, in heart muscle,

A., III, 13. pharmacological action of, effect of cyanide

and other metal-binding substances on, A.,

sympathetic poisons and, A., III, 28.

toxicity of, influence of sodium bisuIphite on, A., III, 210. Adreno-cortical rests, cancer of, associated with

hypophyscal abnormality, A., III, 732. Adsorbed state, cluster formation and phase

transitions in, A., I, 245. Adsorbents, amphoteric, Nernst formulæ applied

to, A., I, 283. porous, surface area of, A., I, 124.

powdered, electrical conductivity of, A., I, 39. Adsorption, capillary theory of, and hysteresis, A., I, 123.

chromatographic, A., II, 11. separation of azoyl derivatives of sugars by,

A., II, 6. condensation and supersaturation of adsorbed

phases in, A., I, 151. constitution and, A., I, 123, 277. data for, correlation of, A., I, 58.

from non-aqueous solutions, A., I, 171. ionic, in electrical layers, A., I, 102.

isotherms for, free surface energy as basis for

equations for, A., I, 151, 152.

mechanism of, A., I, 277.

negative, Gibbs' formula for, A., I, 35.

on solids, contact angles in, A., I, 245.

photo-effects of, in pigment-fluid phase, A., I,

Adsorption analysis. See under Analysis. Aedes albopictus, transmission of West Nile virus by, A., III, 78.

Aeolis pilata, manipulation of nematocysts of Pennaria tiarella by, A., III, 237.

Aerating powder, determination in, of residual carbon dioxide, C., 129.

Aerobacillus polymyxa, cultures of, strepto-thricin-resistant, A., III, 845. Aerobacter, type of, in fæces, A., III, 147.

180 Aërobacter cloacæ, illness caused by, in cotton workers, A., III, 73. Aërobacter indologenes, assimilation by, of acetic and succinic acids containing heavy carbon, A., III, 145. effect of iron deficiency in, A., III, 771. Aeromonas hydrophila, fermentation by, A., III, Aerosols, coagulation of, van der Waals forces in, A., I, 172 filtration of, theory of, A., I, 279. research on, A., I, 59. See also Colloids. Aerosol-OT, toxicity of, A., III, 362. Æsthesiometer, A., III, 178. Ætiocholane-3(a):12(β)-diol-17-one, A., II, 106. preparation of, A., II, 267. Ætiocholanie acid, 3(a):12(a)-dihydroxy-, and its 3-monoacetate, A., II, 341. allo Ætiocholanic acid. and its methyl ester, A., II. 105. alloÆtiocholanic acid, $3(\alpha)$ - and $3(\beta)$ -bromo-, methyl esters, A., II, 105. 3(a)-hydroxy-, and its 3(a)-acetyl derivative, and their methyl esters, A., II, 105. 3(β)-hydroxy., 3(β)-p-toluenesulphonyl derivative, methyl ester, A., II, 105.
 Δ^{2:3} or 3:4-alloætiocholenie acid, methyl ester, A., II, 105. isoallo Ætiolithobilianic acid, trimethyl ester, A., Ætioporphyrin I, hydroxy-, A., II, 382. Affinity, theories of, A., I, 111. Africa, Southern, bushman tribes of, A., III, Agar-agar, f ormula for, A., II, 207. from Australian seaweed, bacteriological tests of, C., 186. lead semisolid, for use in identification of enteric bacilli, A., III, 505. production of, from Gracilaria lichenoides, A., III, 770. recovery of, from culture media, A., III, 144, 770. substitute for, in culture media, A., III, 294. sodium pectate as, A., III, 71. thiamin content of, A., III, 290. used, reclamation of, A., III, 505. Agglutination, apparatus for reading of reactions in, C., 194. Agglutinogens, A-B, linkage between, and oval blood cells in man, A., III, 321. isoAgglutinogens, human, substance in animal parasites related to, A., III, 715. Aggregation, states of, A., I, 166. Agnosia, visual, optic recognition in, disintegration and restoration of, A., III, 532. Agranulocytosis, after novaldin dosage, A., III, 56. after succinylsulphathiazole treatment, A., III, 208. allergic, with complications, due to sulphapyrimidine, A., III, 633. treatment of, with sulphapyrimidine, A., III, 167. Agricolite, A., I, 135. Agricultural products, vitamin content of, in relation to diet improvement, A., III, 266. Agropyron spicatum, carbohydrates and nitrogen in, A., III, 441. Agrostis tenuis, growth of, effect of vitamin B₁ on, A., III, 231. Ailanthus, pollen, sensitivity to, A., III, 851. Ailanthus glandulosa, leaves, hexenal from, A., Air, acoustical tables for, A., I, 197. alveolar and expired, carbon dioxide and oxygen pressure in, A., III, 578. detection in, of water, (P.), C., 47. detection and determination in, of hydrogen fluoride, C., III. of trinitrotoluene, diethylaminoethyl alcohol as reagent for, C., 88. determination in, of acetylene, C., 20. of acrylonitrile, C., 88. of allyl alcohol, C., 38. of cresols and phenol, C., 22. of glycols, C., 38.

Air, determination in, of halogenated hydrocarbons, C., 88. of helium, A., I, 293 of nitrogen oxides, C., 110. of tetryl, C., 88. inspired, composition of, effect of, on heart, Â., III, 398. ionised, dielectric constant of, in discharge tubes, A., I, 97. Joule effect in, A., I, 80. mixtures of, with vapours, device for preparing, C., 52. residual, measurements of, A., III, 174. sterilisation of, A., III, 695. testing of, (P.), C., 88. thermodynamic properties of, A., I, 122. See also Atmosphere. Airmen, care of, A., III, 17, 578. ear and nose of, occupational conditions of, A., III, 184. fatigue in, flicker fusion tests as measure of, A., III, 804. response to stress in, A., III, 176. See also Aviation. Ajacine, A., II, 175.
Alanine, A., II, 152.
dl-Alanine, hydrolysis of, by enzymes of Fusarium lini, A., III, 141. l-Alanine, degradation of, in animal organism, A., III, 426. d(-)- and l(+)-Alanines, physical properties of, A., II, 35. B-Alanine, benzyl ester, platinichloride of, A., II, 36. determination of, C., 191. in animal and plant substances, C., 140. distribution of, A., III, 415. formation of, A., II, 91. dihydroxyacyl derivatives of, from tunny fish liver, A., III, 124. synthesis of, in rats, A., III, 749. N:N'-Alanylcarbamylglycine, A., II, 36. Albers-Schonberg disease, A., III, 710. Albright's disease, diagnosis of, A., III, 652. See also Bone, disorders of. Albumin, crystalline, from chicken blood, A., III, 716. denatured, determination in, of thiol groups, determination of, in blood, C., 125. egg-, coagulation and denaturation of, effect of sugars on, A., II, 88. fibres from, structure of, A., I, 100. serum, as stabiliser for Schick toxin, A., III, 567. electrophoretic and ultracentrifugal studies of solutions of, A., III, 793. heat-coagulation of, in man, A., III, 573. horse, native and regenerated, antigenic properties of, A., III, 97. human, concentrated, A., III, 795. thermal stability of, A., III, 793. treatment with, of shock, A., III, 794. human and bovine, effect of, on blood volume after blood loss in man, A., III, 168. hydrolysis of, A., III, 716. osmotic pressure of, A., III, 793. thermal stability of, effect of non-polar anions on, A., III, 793. Albuminous substances, reaction of, with invert soaps, A., II, 115. Albunea, larvæ, recapitulation in, A., III, 627. Alcaligenes facalis, cholic acid oxidation by, A., Alcaptonuria, in rats on high-tyrosine diet, A., III, 129. in white rats, A., III, 50. Alcohol. See Ethyl alcohol. Alcohols, acetylenic, from aβ-unsaturated aldehydes and ketones, A., II, 358. aliphatic, cryoscopy and surface activity of, in benzene solutions, A., I, 171. esters of, A., II, '3. primary, high mol. wt., solubilities of, A., I, 221.

spectra of, absorption, infra-red, A., I,

Alcohols, catalytic conversion of, aldehydes, olefines, and paraffins, A., II, 30. catalytic decomposition of, on metals, A., I, 288. dehydrogenation of, A., I, 179. chromium oxide-copper catalysts for, A., I, higher, films, structure and viscosity of, A., I, 278. oxidation of, by photosynthetic bacteria, A. III, 695. reaction of, with acid anhydrides, A., II, 119. with m-dinitrobenzene and potassium cyanide, A., II, 134. with metal oxides, A., II, 30. spectra of, Hertzian, A., I, 212, 265. terpene series, dehydration of, A., II, 343. tertiary, parachors of, A., I, 214. toxicities of, in relation to carbon-chain length, A., III, 212. isoAlcohols, action on, of chromia catalyst, A., II, 358. Alcoholism, acute, diastase in blood and urine in, A., III, 59. chronic, in veterans, A., III, 60. Aldehydes, condensation of, with 4-hydroxycoumarins, and dehydration of the products, A., II, 166. with malonic acid, A., II, 98. cyanoethylation of, A., II, 185. determination of, in ethyl alcohol, C., 21. fatty, higher, C., 117. fuchsin test with, C., 117. parachors of, and structure, A., I, 238. polymeric, kinetics of, A., II, 121. preparation of, by ozone oxidation, A., II, 121. apparatus for, C., 104. reduction of, polarographically, A., I, 226. spectra of, absorption, and of their derivatives, A., I, 28. aβ-unsaturated, condensation of. with phenols, A., II, 80. dimerisation of, A., II, 198. isoAldehydes, action on, of chromia catalyst, A., Aldehydo-acids, behaviour of, at dropping mercury electrode, A., II, 298, 307. structure of, and tautomerism, A., II, 261. o-Aldehydocarboxylic acids, A., II, 162. 5-Aldehydo-2:3-dimethoxybenzoic acid, A., II, 161. y-Aldehydo-y-ethyl-n-hexoic acid, A., II, 185. γ-Aldehydo-γ-ethyl-n-hexonitrile, A., II, 185. γ-Aldehydo-γ-ethyl-Δ^δ-n-octenoic acid, A., II, 185. -Aldehydo- γ -ethyl- Δ^{δ} -n-octenonitrile, A., II, γ-Aldehydo-γ-ethyl-n-octoic acid, A., II, 185. γ-Aldehydo-γ-ethyl-n-octonitrile, A., II, 185. -Aldehydofuran-3-carboxylic-2-acetic diethyl_ester, derivatives of, A., II, 53. (4-Aldehydo-2-hydroxy-3-ketocyclohexyl)propiolactone, semicarbazone of, A., II, 195. 5-Aldehydo-2-phenylfuran-3-carboxylic and its derivatives, A., II, 53. Aldol, derivatives of, A., II, 183. Aldol condensation, A., II, 4, 233. Aldonic acids, and their nitriles, acetylated, preparation of, A., II, 321. Aletris farinosa, pharmacology of, A., III, 684. Aleuritic acid, o-methyl ether. See o-Methoxypalmitic acid, θ_{ι} -dihydroxy-. transformation of, into hexadecenoic acid, A., II, 179. yield of, from shellac, A., II, 284. Algæ, fresh-water, carotenoids of, A., III, 444. photosynthesis and carbon dioxide reduction in, A., III, 442. pyrenoids in, A., III, 705. Alimentary tract, absorption from, of acetic, butyric, and propionic acids, A., III, 539. fate of methylcellulose in, in man, A., III,

literature on, roentgenological review of, A.,

motility patterns of, in children, A., III, 656.

III, 412.

Alimentary tract, production of acetic, butyric, and propionic acids in, A., III, 539.

tone of, chemical transmission and action of drugs on, in earthworm, A., III, 345. upper, cancer of, metastasis in, A., III, 417.

Alimentation, intravenous, protein hydrolysates in, A., III, 546.

Aliphatic compounds, physical properties of, A., I, 242.

Alkali azides, photolysis of, in aqueous solution, A., I, 229.

halides, activated by heavy metals, ultraviolet luminescence of, A., I, 52.

crystals, coloured, bleaching of, A., I, 146. determination in, of small admixtures, C., 105.

photo-electric current in, A., I, 185. hydroselenides and hydrosulphides, heat of transition of, A., I, 38.

hydroxides, solutions, alkalinity of, A., I, 175.

hypochlorites, in preparation of Dakin-

Daufresne solution, A., III, 359. metals, determination of, in silicates, C., 153. ions, collisions of, with helium, hydrogen and mercury, A., I, 73. reaction of, with benzylamine, A., II, 216.

molybdates, A., I, 231. tungstates, A., I, 231, 256.

Alkalis, administration of, and endogenous citric acid production, A., III, 427. in sulphapyrimidine therapy, A., III, 829.

adsorption of, by silica in presence of neutral salts, A., I, 151.

caustic, determination of, by titration, (P.), C., 3.

oxidising actions of, A., II, 126.

Alkaloids, A., II, 280.

determination of, calibration of, fluorimeters used for, C., 99.

in plant material, C., 36.

formation of, by halophytes and xerophytes, A., III, 227

in plants, A., III, 853.

fumariaceous, A., II, 87. in plants in relation to soil acidity, A., III, 154.

of Leguminosæ, A., III, 568.

See also Accnite, Alstonia, Cinchona, Digitalis,

Alkanes, aminodthydroxy-, contiguously substituted, A., II, 4.

Alkaptonuria. See Alcaptonuria.

p-Alkoxybenzylideneanilines, homologues of, A., II, 14.

γ-Alkoxybutadienes, αβ-dichloro-, synthesis and properties of, A., II, 149.

Alkoxy-groups, determination of, apparatus for, C., 43.

with thiosulphate washers, C., 116.

Alkyl bromides, constitution and physical properties of, A., I, 53.

dibromides, diastereoisomeric, A., II, 117. chlorides, constitution and physical properties of, A., I, 53.

halides, rearrangement of, A., I, 252.

iodides, constitution and physical properties of, A., I, 53.

sulphates, surface tension of, at oil interfaces, effect of electrolytes on, A., I, 124.

sulphides, parachors of, and structure, A., I, 238.

sulphites, A., II, 318.

parachors of, and structure, A., I, 238. Alkylacetoacetic acids, esters, action of diazobenzene on, A., II, 259.

Alkylamines, higher, primary, reaction of, with carbon disulphide, A., II, 183.

Alkylation, by olefines, in presence of aluminium chloride, A., II, 188, 194.

carbon, with quaternary ammonium salts, A., II, 324.

β-Alkylation by Grignard reagents, A., II, 17. Alkylbenzenes, identification of, A., II, 127. N-Alkylbenzenes, N-poluhydroxy-, rotation of, A., II, 73.

2-Alkylbenziminazoles, 2-a-chloro-, allylic character and reactions of, A., II, 83.

Alkylbenzoic acids, p-amino-, basic alkyl esters of, A., II, 134.

Alkyleyanoacetic acids, ethyl esters, preparation of, A., II, 325.

9-Alkylflavines, 9-polyhydroxy-, rotation of, A., II. 73.

dl-Alkyl-β-d-glucosides, acid hydrolysis of, A., I. 19.

4-Alkyl-42:5-cyclohexadienones, A., II, 195. Alkylcyclohexanes, physical data of, A., II, 40. Alkylcyclohexanones, formation of, by semipinacolic transformation, A., II, 335.

3'-Alkylnaphthalene -1'- azobenzene -4 - sulphonamides, 4'-hydroxy-, A., II, 257.

2-Alkyl-1:4-naphthaquinones, 3-hydroxy-, A., II, 139.

1-n-Alkylcyclopentanols, and their derivatives, A., II, 218; C., 118.

3'-Alkyl-1:2-cyclopentenophenanthrene,

synthesis of, A., II, 10.

Alkylphenols, hydrogenation of, using Raney nickel, effect of bases on, A., II, 334.

3-Alkylpiperidones, synthesis of, A., II, 169. Alkylpyruvic acids, cyano-, esters, from aliphatic nitriles, A., II, 213.

3-Alkylquinolines, synthesis of, A., II, 170. n-Alkylsuccinic anhydrides, condensation of, with anisole, A., II, 78.

Alkylsulphonium iodides, A., II, 90.

Alkylthiols, parachors of, and structure, A., I,

Allantoic fluid, physical properties of, in chicks, A., III, 30.

Allantoin, absorption and excretion of, in mammals, A., III, 755.

decomposition of, by intestinal bacteria, A., III, 695.

determination of, in blood, C., 174.

Allene, equilibrium of, with methylacetylene, A., I, 84.

spectrum of, absorption infra-red, A., I, 236. Allergens, chemistry of, A., III, 81, 779. contact tests with, A., III, 851.

Allergic diseases. See under Diseases. Allergy, A., III, 779.

after tetanus toxoid injections, A., III,

diagnosis of, skin tests for, A., III, 851. effect of neuro-hormonal regulations on, A., III, 567.

food, gastro-intestinal, A., III, 851. oral deallergisation of, with propeptans,

A., III, 836. use of synthetic diet for, A., III, 749.

in delayed healing and disruption of wounds, A., III, 818.

milk, treatment of, strained meats as protein basis for milk substitutes in, in infants, A., III, 749.

skin, treatment of, with lactic acid and peptone, A., III, 306. to food odours, A., III, 851.

treatment in, with ethylene disulphonate in children, A., III, 359.

use of histamine in, A., III, 557.

vaccinal reactions in, A., III, 376. Allium, mitosis in, effect of acenaphthene and

colchicine on, A., III, 381.

polyploidy in, induced by p-dichlorobenzene, A., III, 231.

Allium cepa, roots, effect of growth substances on, A., III, 854.

Allium fistulosum, tumour growth in, colchicine-induced, A., III, 381.

Allolobophora chlorotica, giant sperms and polyvalent sex cells in, formation of, A., III,

Allowyces, respiration of, effect of amino-acids and sugars on, A., III, 2.

Allophanic acid, cetyl ester, A., II, 199.

in tissues during shock, A., III, 720.

Allophanic azide, action on, of ammonia, A., II, 292.

Alloxan, diabetes induced by, A., III, 407, 465, 536.

injurious action of, on kidney and pancreas, A., III, 543. Alloxazine-adenine dinucleotide, destruction of, Alloys, analysis of, spectrographic, C., 112. spectroscopic, C., 99.

and their structure, C., 98.

berthollide and daltonide phases in, A., I, 128. binary, X-ray diffraction by, A., I, 30.

structure, of, I, 102. catalysis by, A., I, 108, 205. crystal chemistry of, A., I, 54.

hard metal, structure of, A., I, 170. hardness and lattice stress in, A., I, 10.

light, castings, X-ray fluorescent examination of, C., 55.

magnetic, temperature-sensitive, A., I, 58. metalloid, structure of, and ferromagnetism, A., I, 150.

microradiography of, C., 198.

molten, electron interference patterns from, A., I, 100.

of transition metals, A., I, 244. thermochemistry of, A., I, 38, 155. volume relations in, A., I, 102, 169.

Allyl alcohol, determination of, in air, C., 38. Allyl compounds, isomerisation of, A., II, 36.

Allyl groups, migration of, in three-carbon systems, A., II, 47.

1-Allylchrysene, 2-hydroxy-, 2-acetyl derivative, A., II, 131.

a-Allyl-2028-n-heptadienoic acid, A., II, 47.

a-Allyl-∆as-heptadienonitrile, A., II, 47. 2-Allylcyclohexanone, 2:4-dinitrophenylhydra-

zone, A., II, 47. 2-Allylcyclohexylideneacetonitrile, A., II, 47.

 α -2-Allylcyclohexylidene- Δ^{γ} -n-pentenonitrile, A., II, 47.

2-Allylcyclohexylidenephenylacetonifrile, A., II,

Allylic rearrangements, A., I, 157; II, 246. in reaction of cuprous cyanide with butenyl halides, A., II, 250.

2-Allylimino-oxazolidine picrate, A., II, 185.

2-Allyliminotetrahydro-1:3-oxazine, picrate, A., II, 185.

N-Allylmorphine, antagonistic effect of, on morphine, A., III, 135.

2-Allyloxy-1-allyl-3-naphthoic acid, pyrolysis of, A., II, 135.

2-Allyloxychrysene, rearrangement of, A., II, 131.

7-Allyloxy-5-methylcoumarin, A., II, 270. β -Allyl- Δ^{δ} -pentenyl β -acetate, A., II, 3.

10-Allylphenothiazine, and its 5-oxide, A., II, 353.

N1-Allylsulphathiazoline, and its N4-acyl derivatives, A., II, 26. Allylthiourea, thyroid tumours produced by, A.,

III, 807. 5-Allylvanillin, 6-bromo-, and its methyl ether,

A., II, 167. Almonds, mountain, detection of, in sweetmeats,

C., 132. Aloes, cathartic action of, in mice, A., III, 681.

determination in, of aloin, C., 186.

Aloin, determination of, in aloes, C., 186. Alopecia, effect on, of inositol, in rats, A., III,

424, 493. Alstonia alkaloids, pharmacology and toxicology

of, A., III, 210. Altitudes, high, effect of, on pulse wave velocity,

A., III, 17. tolerance to, effect of œstrogens on, in rats, A., III, 30.

D-Altronic acid, calcium salt, preparation of, A., II, 212.

D-Altrose, preparation of, and its oxime, A., II, 251.

Alums, crystal structure of, A., I, 99.

Alumina. See Aluminium oxide.

Aluminates. See under Aluminium. Aluminium, as X-ray monochromator, C., 96.

colour-etching of, and of its alloys, C., 156. commercial, effective cross-section of, for slow neutrons, A., I, 189.

crystals, bending of, stress development in, A., I, 55.

etching of, A., I, 255, 291.

orientation and solution potentials of, A., I, 178.

formation of oxide layers on, A., I, 254.

Aluminium, oxidation of, electrolytically, A., I,

ultra-ray impact transmitted from air to, A., I, 76.

Aluminium alloys, analysis of, polarographic and spectrochemical, C., 60.

spectrographic, C., 60, 61. with steeloscope, C., 7.

articles of, production of, detection of cracks and flaws during, (P.), C., 104.

containing copper, determination in, of zinc,

determination in, of iron, magnesium, and silicon, C., 8.

of lithium, spectrographically, C., 2. of silicon, C., 9, 61. of sodium, C., 2.

of zinc, in presence of copper, C., 59. examination of, in relation to quenching

stress, C., 196.

metallography of, C., 156. preparation of microspecimens of, C., 108.

with chromium and copper, A., I, 57.

with copper, ageing of, A., I, 11. with copper, iron, and nickel, magnetic properties of, A., I, 277.

with copper and magnesium, crystal structure of, A., I, 30.

with copper and manganese, electrical properties of, A., I, 11.

with iron, manganese, and silicon, A., I, 9. with lanthanum, crystal structure of, A., I, 99.

with magnesium, annealing of, phase formation in, A., I, 220.

binary, precipitation treatment of, A., I, 11.

with magnesium and with zinc, precipitation from, A., I, 11.

with magnesium and zinc, analysis of, spectroscopically, C., 108.

with magnesium, manganese, and zinc, A., I, 9.

constitution of, A., I, 33.

with nickel, reduction with, C., 19.

in aqueous alkali, A., II, 154, 258. with silicon, precipitation of silicon from, A.,

I, 221.

with silver, ageing of, A., I, 10. with vanadium, VAl₃, structure of, A., I, 145. Aluminium, antimonate, lattice constants of, A., I, 195.

bromide, solubility of, in n-butane, A., I, 170. chloride, action of, on aromatic bromocompounds and on phenols, A., II, 43. on phenyl ethers, A., II, 294.

catalytic activity of, increased by metallic chlorides, A., I, 108.

isomerisation of aromatic ketones with, A., II, 223.

subfluoride, A., I, 44.

trifluoride, determination in. of fluorine, C.,

halides, liquid and solid, spectra of, Raman, A., I, 117.

hydroxide, colloidal, effect of, on blood coagulation, A., III, 392. gels, atomic arrangement in, A., I, 152.

conductivity of, with lactic and pyruvic acids, A., I, 39.

immunising power of vaccines absorbed on. A., III, 376.

preparation of, pure, C., 44.

properties and structure of, in relation to method of preparation, A., I, 145.

orthohydroxide, trai bayerite, A., I, 291. transformation of.

nitrate, hydrates, heats of formation of, A., I. 226.

refractive index of, and of its mixtures with sodium acetate, citrate, and tartrate, A., I, 16.

oxide, adsorbent, activity of, in chromato-graphic analysis, C., 142.

adsorption by, of hydrocarbons and water vapour, A. I, 82.

colloidal, gels, absorption by, of nitrous gases, A., I, 35.

Aluminium, oxide, determination of, in nepheline concentrate, C., 60. dyeing of, A., I, 222.

equilibrium of, with calcium oxide and water, A., I, 203.

with lead oxide, and with lead oxide and silica, A., I, 128.

with lithium oxide and silica, A., I, 128. y-form, catalytic action of, and of its mixtures with beryllium oxide, A., I, 158. mixtures of, with ferric oxides, diffusion of

gases into, A., I, 35. modifications of, A., I, 254.

oxyfluoride, A., I, 110.

Aluminates, determination in, of silicates, in presence of chromium and fluorine, C., 9. Fluoaluminates, structure of, A., I, 4.

Aluminium detection and determination :-

analysis of, at Kirov plant, C., 61. at Ordzhonokidze plant, C., 61.

polarographic and spectrochemical, C., 60. detection of, fluorescence reactions for, C., 8. in steel, with aurintricarboxylic acid, C., 60. determination in, of sodium, C., 2.

spectrographically, C., 105. determination of, by precipitation with cupferron, C., 8.

colorimetrically, C., 8, 155. in magnesium alloys, C., 7.

polarographically, C., 108. volumetrically, C., 156. in ores and silicates, C., 7.

in steel, C., 108.

in water, and its separation from iron, C., 39.

Aluminium articles, production of, detection of cracks and flaws during, (P.), C., 104. Aluminium linkings, A., I, 79.

Alveoli, gas tension in, influence of posture on, A., III, 175.

Amadori transformations, A., II, 72.

Amaranthaceæ, tetraploidy in, induced by colchicine, A., III, 380.

Amaurosis, after nasal hæmorrhage, A., III, 333.

Amblyopia, due to vitamin deficiency, A., III, 463, 648.

suppression, A., III, 583. tobacco-alcohol, A., III, 802. treatment of, A., III, 333.

Amblyopia ex anopsia, in infantile cataract,

A., III, 584. Amblystoma, behaviour problem and choline-esterase in, A., III, 235.

development in, respiratory during, A., III, 159. metabolism

embryos, liver extirpation and implantation in, in relation to blood formation, A., III,

90. medulla reversal in, A., III, 318.

larva, limb regeneration processes in, effect of blastema transplantations on, A., III, 388. lateral line nerve of, regeneration of, A., III, 158.

neural crest of, removal of, deficient efferent innervation of extremities after, A., III, 387.

neurulation in, A., III, 318.

Amblystoma punctatum, brachial cords in, heterotopically-grafted, innervation supernumerary limbs by, A., III, 235. grafted eyes of, showing return of vision, A.,

III, 247.

Amblystoma tigrinum, brain of optic and post-optic systems in, A., III, 21.

Amenorrhosa, due to ovaries, A., III. 812. bilateral polycystic

functional, bleeding induction and regulation in, by sodium cestrone sulphate, A., III, 32.

primary and postmenopausal, cestrogen withdrawal bleeding in, A., III, 810.

secondary, Zondek, treatment of, A., III, treatment of, A., III, 32.

endometrial pattern before and after, A., III, 812. with prostigmine, A., III, 254.

Amethocaine-glucose solution, stability of, for spinal anæsthesia, A., III, 361.

Amia, meningeal myeloid tissue histology of, A., III, 520.

Amides, aliphatic, solubility of, A., I, 34. and their derivatives as diuretics, A., III, 759. interaction of, with amines, A., II, 5. metallic, A., I, 45.

hydrop-Amidinophenylarsine, dibromo-, bromide, A., II, 242.

dichloro-, hydrochloride, A., II, 242.

p-Amidinophenylarsinous acid, hydrochloride, A., II, 242. 4'-Amidinostilbene, 4-hydroxy-, hydrochloride,

A., II, 44. Aminase, deamination by, of sympathomimetic

amines, A., III, 140.

Amination, aromatic, A., II, 330.

Amines, acylation of, A., II, 5.
aliphatic, normal, base strength and steric strain of, A., I, 224.

secondary, high-mol. weight, solubilities of, A., II, 248.

pharmacology of, A., III, 831.

primary, high mol. wt., determination of, C., 167.

solubilities of, A., I, 123. secondary, unsymmetrical, preparation of, A., II, 183.

tertiary, high-mol. wt., solubilities of, A., I, 221.

and their derivatives, as diuretics, A., III, 759.

aromatic, derivatives of, with chloral, A., II, 157.

nuclear methylation of, A., II, 157. primary, acetylation of, A., III, 129.

reaction of, with dichromates in presence of oxalates, A., I, 253.

diazotised, reaction of, with cuprous oxide, A., II, 159.

fission of, by alkali metals, A., II, 190.

heterocyclic, secondary, reactions of, with a-bromo-β-amino-ketones, A., II, 171.

primary, determination of, plus secondary amines, C., 167. preparation of, with liquid ammonia, A., II,

121. viscosity of, at b.p., A., I, 81.

primary and secondary, reagent for, A., II, 372; C., 167.

reactions of, with glucose, A., II, 37, 251. with halogenated unsaturated compounds, A., II, 323.

related to adrenaline, cardiovascular actions of, A., III, 553.

secondary, preparation of, A., II, 323.

sympathomimetic, deamination aminase, A., III, 140. optical isomerides of, pressor action of, A.,

III, 494. structure of, in relation to tachycardia during cyclopropane anæsthesia, A., III,

760. tertiary, preparation of, A., II, 323. Amino-acids, A., II, 35, 152, 249; III, 197;

C., 191. absorption and utilisation of, in chicks, A., III, 605.

action of, and their combinations, on rats, A., III, 750:

on anaphylaxis and histamine reactions in guinea-pig intestine, A., III, 494.

on leukæmia induction in mice, A., III, 599. analysis of, by ninhydrin method, C., 191.

chromatographic, with silica gel, C., 118. microbiological, with Lactobacillus casei,

aromatic, oxidation of, A., II, 369. as substitute for dietary protein, A., III, 600.

dicarboxylic, determination of, in protein

hydrolysates, C., 133. clinical use of, to n equilibrium, A., III, 51. maintain nitrogen

containing sulphur, hydantoins of, A., II, 309. utilisation of, by chicks, A., III, 419.

Amino-acids, degradation of, in the organism, A., IÍI, 426, 838.

serum-proteins and, A., III, 392.

detection of, colour reactions for, C., 118, 167. determination of, C., 42. iodometrically, C., 166. microbiologically, C., 92.

essential, mixed, biological value of, A., III, 823.

intake of, effect of, on fat accumulation in liver, A., III, 749.

metabolism of. See under Metabolism.

mixed, analysis of, C., 42.

effective for plasma-protein production, parenterally, A., III, 634.

nicotinamide-liko substance from, A., II, 116. reaction of, with a-ketohexonates, A., II, 184. requirements of, for chicks, A., III, 356.

for growth in mice, A., III, 41. for man, A., III, 265. spectra of, Raman, A., I, 4.

synthesis of, asymmetric, in vivo, A., III, 274.

from substituted cyanoacetic esters, A., II,

synthetic, A., II, 348.

yield of, from animal and plant tissue after hydrolysis of fat-free tissues, A., III, 349. d-Amino-acids, acetylation of, in vivo, A., III, 754.

a-Amino-acids, arylhydrazones of, preparation of, from aromatic diazo-compounds and alkylacetoacetic esters, A., II, 247.

esters, N-carboxy-derivatives of, A., II, 5. phenylhydrazones, preparation of, A., II, 259. rotatory dispersion of, A., II, 70.

 β -Amino-acids, synthesis of, A., II, 324. d-Amino-acid oxidase. See under Oxidase. Amino-alcohols, A., II, 131, 152.

aliphatic, determination of, C., 167. 3-piperidyl derivatives of, A., II, 382.

β-Amino-alcohols, rearrangement of, by heat and alkali, A., II, 258.

Amino-aldehydes, aromatic, synthesis of, A., II,

Amino-ketones, A., II, 347, 352. aromatic, synthesis of, A., II, 371. aβ-diAmino-ketones, A., II, 171, 279.

Aminopeptidase, in chick embryos, A., III, 140. Aminopherase, aspartic, co-enzyme of, A., III, 366.

Aminophyllin, A., III, 212. death after injection of, A., III, 834.

effect of, on blood pressure in bronchial asthma, A., III, 134.

Aminopolypeptidase, activation of, A., III, 287. from anaerobic bacteria, A., III, 66.

Ammi visnaga, visnagin from, A., II, 199. Ammonia, dangerous concentration of, in air, signalling of, C., 46.

decomposition of, in electrical discharge, A., I, 20.

on iron catalysts, A., I, 288.

determination in, of pyridine, C., 23. determination of, in biological materials, C., 41.

in urine, C., 177.

equilibrium of, with acetic acid, A., I, 225. with methane and with nitrogen, A., I, 249. in blood. See under Blood.

liquid, reactions in, A., I, 183. oxidation of, A., I, 66.

catalytically, A., I, 42.

urinary, glutamine as source of, A., III, 117. Ammonium ions, central action of, effect of

glutamic acid on, A., III, 59. determination of, in ammonium and zinc

chloride solutions, C., 6.

Ammonium salts, quaternary, bactericidal potency of, in relation to structure, A., III, 133. germicidal, use of, in nutritional studies,

A., III, 485. Ammonium bromide, spectrum of, absorption, infra-red, A., I, 142.

carbonate, solutions, determination in, of carbon dioxide, C., 108, 156.

chloride, dissociation of, A., I, 219. spectrum of, absorption, infra-red, A., 1, 142.

Ammonium, chloroiridate, structure of, X-ray, A., I, 270.

pentachlorozincate, crystal structure of, A., I,

iodate, crystal structure of, A., I, 239.

permanganate, reaction of, with hydrogen sulphide, A., I, 232.

nitrate, equilibrium of, with sodium nitrate, A., I, 154.

phosphates, synthesis of, from ferroferri-

phosphates, A., I, 292.
sulphate, equilibrium of, with potassium sulphate and water, A., I, 86. persulphate, solubility of, A., I, 82.

Ammono-aldehydes, hydrogenation-dehydrogenation reactions of, A., II, 278.

Ammothamnine, and its hydriodide and picrate, A., II, 281.

Ammothamnus lehmanni, alkaloids of, A., II, 280.

dyes from, and their derivatives, A., II, 284. Amniotic fluid, physical properties of, in chicks, A., III, 30.

Amaba, attachment to substratum and ingestion by, in strychnine sulphate, A., III, 503.

movements of, mathematical biophysics of, A., III, 745.

theory of, A., III, 160.

physiology of nucleus in, A., III, 369.

Amœbiasis, A., III, 693.

Amorpha fruticosa, amorphin in, A., II, 93. Amorphigenin, A., II, 93.

Amorphin, A., II, 93.

Amphetamine. See Benzedrine.

Amphibia, morphology of, among Tetrapoda, A., III, 445.

Amphiboles, Cheliabinsk massif, A., I, 70. distinction of, from pyroxenes, A., I, 112.

Amplifier, valve, for measuring glass electrode potentials, C., 101.

Ampulla of Vater, A., III, 625.

isoAmyl alcohol, adsorption of, at air-water surfaces, A., I, 277.

8-n-Amyl-γ-aminopropylamino-6methoxyquinoline, $8-\epsilon$ -amino-, and its salts,

A., II, 57.

Amylase, biliary, in fowls, A., III, 257. determination of, C., 186. in blood, C., 175.

intravenous injection of, in rabbits, A., III,

plant, effect of chlorides on, A., III, 366. serum-, decrease of, in adrenal cortex-

deficient cats, effect of deoxycorticosterone on, A., III, 251.

 β -Amylase, effect of, on maize-glycogen, A., III, 840.

3'-n-Amyl-1'-azobenzene-4-sulphonamide, 4'-hydroxy-, A., II, 257.

p-n-Amylbenzenesulphonxanthylamide, A., II, 156.

2-n-Amylbenzoxazole, A., II, 174.

 $sec.-Amyl-\beta-bromoallylbarbituric$ acid, pharmacology of, and its combination with antipyrine, A., III, 361.

 α -n-Amyl- β -cetylstilbene, 4:4'-dthydroxy-, and its dimethyl ether, A., II, 129.

a-Amylcinnamaldehydes, substituted, A., II,

3-n-Amylcoumarin, 4-hydroxy-, A., II, 166. β -n-Amyl- β -n-heptylbutyric acid, and its methyl

ester, A., II, 180. β-n-Amyl-β-n-heptylbutyric acid, α-cyano-, ethyl ester, II, 180.

 β -n-Amyl- β -n-heptylbutyronitrile, A., II, 180. 4-n-Amyl- $\Delta^{2:8}$ -cyclohexadienone, and p-nitrophenylhydrazone and oxime, A., II,

isoAmylidene-n-butylamine, A., II, 183 isoAmylidene-n-propylamine, A., II, 183.

Amylolysis, enzymic, A., III, 432.

2-isoAmylnaphthalene, 1:3-dihydroxy-, and its diacetate and dibenzoate, A., II, 130. Amyloid disease. See under Diseases. Amyloidosis in atrophic arthritis, A., III, 52.

Amylose, butanol-precipitated, structure of, A.,

Amylose, maize, potato, and tapioca, acetates, mol. wt. and viscosity of, A., I, 201. with glycerol plasticiser, structure of, A., I,

100. y-n-Amyl-Δαδ-pentadiene-ac-dicarboxylic acid, ethyl ester, A., II, 195.

 β -n-Amylpropionitrile, A., II, 82.

γ-n-Amyl-n-propylamine, dipicrate, A., II, 82. 9-y-n-Amylpropylamino-2-methoxyacridine,

6-chloro-, A., II, 83.

Amyoplasia congenita, causing feetal malpresentation, A., III, 446.

l-a-Amyradiene, A., II, 109.

α-Amyradiene, dichloro-, A., II, 109.

a-Amyradienol, dehydration of, with phosphoric oxide, A., II, 109.

a-Amyradienone-III, A., II, 109. d- and l-a-Amyratrienes, A., II, 110.

a-Amyrin, dehydration of, with phosphoric oxide, A., II, 109.

 β -Amyrin, hydroxydione from, and its derivatives, A., II, 22.

Anabasis aphylla, constituents of, A., II, 280. Anæmia, antifactor vitamin-Bc of, isolation of, from liver, A., III, 48.

associated with infection, A., III, 631.

Bartonella muris, A., III, 73.

Cooley's, erythroblastic, familial, A., III, 166. in Indian boy, A., III, 715.

deficiency, in infants, A., III, 715.

deficiency and dyshæmatopoietic, in infancy and childhood, A., III, 322.

destruction of transfused erythrocytes in, A., III, 391.

dimorphic, A., III, 6. due to milk feeding of Shoshone Indian infants, A., III, 418.

due to nicotinic acid deficiency, A., III, 270. due to phenothiazine, vitamin-B and, A., III,

due to pyridoxine deficiency in swine, A., III, 270, 603.

hæmolytic, A., III, 7.

acquired, A., III, 239. acute, A., III, 575.

malignancy, endocarditis, and trait associated with, A., III, 96.

macrocytic, after sulphapyrimidine, A., III, 758.

production of, activity of sulphonamides in, in mice, A., III, 830.

treatment of, with splenectomy, A., III, 166. with transfusion in newborn, A., III, 166.

globulinamia, A., III, 792. with hyper-

hypochromic, in adolescent males, A., III, 6. in gastric carcinoma, A., III, 322.

induction and treatment of, in rats fed sulphonamides in purified diets, A., III, 455.

iron excretion and metabolism in, in man, A., III, 792.

macrocytic, nutritional. treatment autolysed yeast in, A., III, 575.

Marchiafava's, test for, A., III, 630. nutritional, iron deficiency associated with,

A., III, 6. of pregnancy, A., III, 575.

pernicious, cardiovascular manifestations in,

A., III, 326. in negroes, A., III, 322.

peripheral neuritis in, A., III, 178. red blood cell suspensions in, A., III, 631. relation of plasma-vitamin-A to, in syphilitic

cases, A., III, 44. sickle-cell, A., III, 792.

and its non-anaemic variety, A., III, 322. ervthrocyte sedimentation rate in, A., III, 574.

in Indian woman, A., III, 96. in pregnancy, A., III, 792.

physico-chemical blood tests in, A., III, 452. treatment of, with ascorbic acid and iron in school-children, A., III, 239.

with red cell transfusions, A., III, 166, 451. Anaerobiosis, oxidation-reduction potential in, A., III, 222.

adrenaline-cyclopropane, tachy-Anæsthesia, cardia from, drugs for protection against, A., III, 833. advances in, A., III, 135. barbiturate, control of, effect of sodium succinate in, A., III, 682. carbon dioxide absorbers for, A., III, 329, 832. caudal, complications of, A., III, 833. continuous, A., III, 211. in obstetrics, A., III, 211, 683. novocaine, A., III, 554. pontocaine, A., III, 833. procaine, A., III, 833. chloroform, first death from, A., III, 832. choice of, A., III, 429. convulsions during, ætiology and treatment of, A., III, 682. development of, A., III, 832. dichloroacetylene, cranial-nerve palsies with herpes after, A., III, 759. effect on, of hemorrhage, A., III, 280. endotracheal, respiratory morbidity in, after nasotracheal and orotracheal intubation, A., III, 360. ether, cerebral anoxia and, A., III, 360. effect of, on respiratory tract secretion, A., III, 495. maternal, in relation to fœtal respiration inauguration, A., III, 683. misuse of adrenaline during, A., III, 808. ether and sodium evipan, effect of, on circulation, A., III, 526. ether-cyclopropane, death during, adrenaline administration, A., III, 808. explosion hazard in, A., III, 554. explosion and fire hazards in, A., III, 429. gas, technical development of, A., III, 832. horse and swine, A., III, 683. hysterical, sensory reception in, measured by cold pressure response, A., III, 406. in obstetrics, A., III, 833. in relation to cardinc disease, A., III, 429. in severely-wounded patients, A., III, 211. intravenous, continuous, A., III, 211. local, A., III, 211. nitrous oxide, A., III, 211. for thoracoplasty, A., III, 495. mental disturbances after, A., III, 58. pentothal sodium, effect of respiratory stimulants in animals under, A., III, 495. in major surgery, A., III, 760. procaine, A., III, 58, 554. cyclopropane, A., III, 833. cardiac arrhythmias under, A., III, 833. effect of, on circulation under normal and shock conditions, A., III, 526. on peripheral blood flow in man, A., III, 429. pituitrin shock during, A., III, 809. structure of amines in relation to tachycardia during, A., III, 760. recording of data of, in military service, with Hollerith punch cards, A., III, 429. refrigeration, in amputations, A., III, 834. in skin grafting, A., III, 211. regional, around vertebral column, A., III, for neck and upper extremity operations, for operations on head and neck, A., III, for surgery of thorax and abdominal wall, A., III, 429. regional and spinal, effect of, on vasoconstriction and vasodilation of peripheral blood vessels, A., III, 98. sodium evipan, effect of, on circulation under normal and shock conditions, A., III, 526.spinal, cerebrospinal fluid changes after, A., high, circulatory adjustments in, A., III, low, during labour in cardiac failure cases, A., III, 58. nervous tissue changes after, A., III, 834.

Anæsthesia, spinal, nupercaine in glucose for, A., III, 429. pontocaine, A., III, 429. procaine, circulation in, A., III, 833. stability of amethocaine-glucose solution for, A., III, 361. total, A., III, 23. surgical, blood-ether levels in, A., III, 832. sympathetic, in labour, A., III, 103. theory of, based on protoplasmic behaviour in Myxomycetes, A., III, 495. trichloroethylene, midwifery and, A., III, 429.trilene, closed-circuit technique for, hazards in, A., III, 760. use of curare in, A., III, 495. vinethene, hepatorenal syndrome after, A., III, 833. smallAncesthetics, administration of, to animals, A., III, 57. chloroform, volatile, A., III, 832. cocaine, effect of yeast extracts on, A., III, combustible, explosion hazards of, A., III, 58. safe use of, in hospitals, A., III, 832. dialkylaminomethylphenyl-p-aminobenzoate hydrochloride, A., III, 58. 9:10-dihydroanthracenecarboxylic acid, A., III, 682. divinyl ether, A., III, 57, 429. volatile, A., III, 832. effect of, on bacterial flora of respiratory tract, A., III, 361. ether, volatile, A., III, 832. ethyl chloride, volatile, A., III, 832. explosions of, prevention of, A., III, 429. fate of, in body, A., III, 58. trihalogeno-, determination of, in blood and tissues, C., 185. hydrocarbons as, A., III, 832. in abdominal operations, effect of, on vital capacity, A., III, 245. injection apparatus for, C., 194. local, detoxication of, A., III, 833. in transcricoid therapy, death after use of, A., III, 682. optimal composition of solutions of, A., III, 833. reactions to, A., III, 280. synthetic, organic, A., III, 833. local effect of, on gastrointestinal tract motility in man and dog, A., III, 814. piperidine derivatives, A., III, 58. pontocaine hydrochloride, detoxication of, A., III, 361. procaine, reactions to, A., III, 280. cyclopropane, in dental surgery for children, A., III, 682. propenyl ethyl ether, A., III, 429. isopropenyl vinyl ether, A., III, 211. cyclopropyl methyl ether, action of, in man, A., III, 58. ultra-short-acting, injection of, apparatus for, xanthene-9-carboxylic acid, A., III, 682. Anagrine, isolation of, from Cylisus linifolius, A., II, 354. Analcite, occlusion of hydrocarbons by, A., I, Analeptics, present status of, A., III, 555. Analgesia, caudal, A., III, 833. continuous, in obstetrics, A., III, 58. in obstetrics, A., III, 682, 833. Analgesics, acetylmorphine, A., III, 760. dilaudid, A., III, 429. dolantin, A., III, 59. from oxazolidine-2:4-dione, A., II, 382. hydroindazolone derivatives, A., II, 60; III, morphine, A., III, 683. morphine sulphate, A., III, 760. compared with nitrous oxide, in man, A., III, 280. nitrous oxide, compared with morphine sulphate, in man, A., III, 280. pethidine, in obstetrics, A., III, 682. synthetic, A., II, 272. Analogy, homology and, A., III, 89.

Analysis, adsorption, A., I, 222; C., 178, 197. adsorption polarographic, of surface-active substances, C., 204. biological, statistics of, fundamental formula in, A., III, 836. capillary, pseudo-optics in, C., 197. chemical requirements and, C., 43. chlorometric, C., 195. chromatographic, activity of adsorbents in, C., 142. and its applications, C., 142. apparatus for, C., 197. applications of, C., 142. indicators for, C., 118. colorimetric, of cations, C., 46. photo-electric, C., 46. sixty years of, C., 46. with polychromatic light, prevention of errors in, C., 99. combustion, modified Carius tube for, C., 145. conductometric-titration, with dilute solutions, C., 152. with zinc-graphite cell, C., 49. clectrographie, C., 50. electrolytic, internal, C., 194. microchemical, apparatus for, C., 195. fluorescence, C., 168 in food industry, C., 132. in textile industry, ultra-violet lamp for, C., 149. gravimetric, C., 195. hydrolytic precipitation, C., 142. inorganic, organic reagents in, C., 195. interferometric, C., 99. luminescence, C., 46. titration, C., 142.
metallurgical, microchemical, quantitative, organic reagents in, C., 194. microchemical, by electrons, A., I, 74. Flaschentrager's method, use of methyl bromide in, C., 19. polarographic, C., 102. potentiometric, C., 49. volumetric, apparatus for, C., 94. of cations, reagents for, C., 5, 162. of crude drugs, C., 184. of solids, by powder diffraction, C., 196. organic, qualitative, micro-technique in, C., 194. semi-microtechnique in, C., 19. spot tests for, C., 168. photo-electric titration, apparatus for, C., 50. polarographic, C., 49. apparatus for, C., 203. metal characteristics in, C., 49. of cations, C., 203. of metals, C., 203. of volatile compounds, "blowing-out" in, C., 102. potentiometric, titration, in unbuffered solutions, C., 152. of oxidation-reduction systems, C., 204. with collodion and protamine-collodion membrane electrodes, C., 101. qualitative, of anions, "prepared solution" in, C., 195. of silver group of anions, C., 194. radio-chemical, correlation of geological strata by means of, A., I, 257. X-ray, C., 96. X-ray-diffraction, of crystals, C., 146. spectrographic, X-ray-diffraction and preparation of samples for, C., 147. reactions in, A., I, 89. equilibrium of, C., 43, 59. sedimentation, apparatus for, C., 54. spectrochemical, C., 199. accessory equipment for, C., 147. calculator for, C., 199. fused salt technique in, C., 97. quantitative, correlation in, C., 199. light source for, C., 148. multiplier photo-tubes in, C., 148. Raman, of organic compounds, C., 116. X-ray, apparatus for, C., 146. spectrographic, C., 40, 96, 107; (P.), C., 147. arc for, C., 199. at Elektropribor factory, C., 199.

its

Analysis, spectrographic, background interference in, C., 97. compendium of line pairs and operating conditions in, C., 147. in Kirov aluminium plant, C., 61. in Ordzhonokidze aluminium plant, C., 61.

pigments, C., 147. spectroscopic, All-Union Institute of Aviation

spectrophotometric, of mixtures of dyes or

Materials, C., 98. apparatus for, C., 98. factory M.V. Frunze, C., 98. in steelworks, C., 65, 66. in storage-battery industry, C., 62.

in works practice, C., 61, 65, 66. infra-red, C., 45. Institute of Geology, Academy of Sciences,

U.S.S.R., C., 98. of alloys and metals, C., 99.

qualitative and quantitative, charcoal electrodes for, C., 98.

quantitative, and structure of alloys, C., 98. by "transformation" factor, C., 97. thermal, in heated microscope, A., I, 100; C., 100.

volumetric, apparatus for, (P.), C., 95. rack for, C., 206.

volume measurement in, C., 94.

Ananas. See Pineapple plants. Ananas comosus, constituents and growth of, effect of iron on, A., III, 514.

Anaphylactic shock, acetylcholine in, and in paraphylactic shock, A., III, 851.

effect on, of artificial fever, in sensitised guinea-pigs, A., III, 851. of follicular hormone, A., III, 343.

in isolated organs, ascorbic acid and, A., III, 674.

protective action of ascorbic acid in, in guinea-pigs, A., III, 674. treatment of, with plasma transfusion, in

man, A., III, 715. Anaphylaxis, after tetanus toxoid, A., III, 851. effect on, of amino-acids, in guinea-pigs, A.,

III, 494. of neuro-hormonal regulations, A., III, 567. of potassium, sodium, and thiosulphate ions on, A., III, 851.

histamine-sensitivity and, A., III, 153. inhibition of, by imino-compounds, A., III, 81.

Anastomosis, aseptic, clamp for, in gastro-intestinal surgery, A., III, 742.

gastrointestinal, effect on, of sulphanilamide implantation, A., III, 55.

Anatomy, vascular, A., III, 317.

Anchoa compressa, osteology of, A., III, 570.

Anchovy, Pacific deep-bodied. See Anchoa compressa.

Ancylostoma caninum, infection from, effect of, on heart muscle, A., III, 639. immunity induced in dogs by, A., III, 305. treatment of, A., III, 759.

Andalusite in pegmatite, California, A., I, 136. Androgens, action of, in fish, A., III, 33. in ovipositor test, A., III, 738.

biliary excretion of, after injection in dogs, A., III, 473.

concentration of, in urine, A., III, 191. determination of, by sparrows' bill pigmentation, C., 176. in chicks, A., III, 473.

excretion of androgens, 17-ketosteroids, and cestrogens in dogs after dosage with, A., III, 112.

prepuberal treatment with, reproductive capacity of male rats after, A., III, 343. test for, pigment deposition in sparrows' bill in response to, A., III, 741.

transfer of, in parabiotic rats, A., III, 344. treatment with, in gynæcology, A., III, 472. of enuresis, A., III, 254.

of menstrual disorders, A., III, 112. Z-Andromedæ, spectrum of, A., I, 50.

Androstane, $3(\beta)$:5:17-trihydroxy-, $3(\beta)$ -acetate, A., II, 229.

 $3(\beta):16:17$ -trihydroxy-, $3(\beta)$ -acetate, A., II,

Androstan-3(α)- and -3(β)-ols, A., II, 140. Androstan-3(β)-ol-17-one, reaction of, propargyl alcohol, A., II, 140.

Androstan-17-one, $3(\beta)$:5-dihydroxy-, and its $3(\beta)$ -acetate, A., II, 229.

Androstan-3(β):16:17-triol, and its triacetate, A., II, 50.

Androstenedione, A., II, 18.

△4-Androstene-3:17-dione, effect of, A., III, 481.

 Δ^{5} -Androstene-3(μ):16:17-triol, acetates, A., II, 50. and

△16-Androsten-3-ols, with odour of musk, preparation of, A., II, 140. Δ ¹⁶-Androsten-3(α)- and -3(β)-ols, A., II, 140.

16-Androsten-3-one, A., II, 140.

Anemometer, swinging plate, C., 52. Anemones, sea: See Anemonia sulcata. Anemonia sulcata, feeding reactions in, A., III,

Aneurin, activity of, inactivation of, by Chastek paralysis factor, A., III, 688. analogue of, A., II, 146.

antineuritically-effective oxidation product of, A., II, 62.

chloride hydrochloride, salts of, A., II, 62. components of, physiological effects of, A., III, 423.

determination of, C., 33, 84. free and phosphated, C., 33. in brewing materials, C., 128.

in flour and wheat, C., 80. effect of, on urea synthesis, A., III, 44, 269. in wheat, A., III, 269.

liberation of, in nerve section after stimulation, polarographic and optical evidence for, A., III, 18.

on peripheral nerve stimulation, A., III, 18. pyrophosphate, content of, in animal tissues, Ā., IÌI, 199.

determination of, in blood, C., 76.

stimulatory effect of, and its derivatives, on vitamin-B₁ assay by yeast fermentation, A., III, 487.

disulphide, and its dihydrochloride, A., II, 62. utilisation of, by baker's yeast, A., III, 769. See also Vitamin- B_1 .

Aneurysm, aortic. See under Aorta. arterial. See under Arteries.

multiple, of indeterminate origin, A., III, 798. Angina, Vincent's, development of, during

N.A.B. treatment, A., III, 60. Angina pectoris, A., III, 638.

treatment of, with sex hormones, A., III, 328. Angiocardiography, A., III, 170.

Angiography, cerebral, A., III, 456. in oligophrenia, A., III, 646. Angiospasm, ocular, A., III, 104.

Angiotonase, in dog's lymph and plasma, A., III, 328.

standardisation of, A., III, 99.

Angiotonin, action on, of proteolytic enzymes, A., III, 397.

preparation of, C., 175.

pressor response to, loss of, after hæmorrhage and injury to nervous system, A., III, 99. Anhydrase, creatine, from rat fæces, A., III, 138.

Anhydrides, reaction of, with alcohols, A., II, 119.

Anhydroacetyldehydrophenylalanyldehydrophenylalanine, A., II, 99.

Anhydroacetylphenylalanylphenylalanine, and its methyl ester, A., II, 99.

Anhydro-anhydromonocrotalamide, II, 147. Anhydrobenzoyldehydrophenylalanyldehydrophenylalanine, A., II, 99.

Anhydrobis(dehydrophenylalanyl)dehydrophenylalanine azlactone, A., II, 99.

Anhydrochinocystic acid, methyl ester, and its acetate, A., II, 375.

Anhydrodimethoneselenium oxide, bisdinitrophenylhydrazone, A., II, 57. 3:6-Anhydrogalactose, A., II, 214.

4:7-Anhydro-D-gluco-D-guloheptosan $<1,5>\beta<1,6>2:3-di-p$ -toluenesulphonate,

Anhydroleuco:sophoenicin, A., II, 49.

 $a\epsilon$ -Anhydro-D-mannitol, m-nitrobenzylidene derivative of, A., II, 210.

Anhydro-p-methoxypropiophenone disulphide. 2:4:6-Tri-p-anisyl-4-methyl-2-ethyl-I:3-See dithiacyclohexane.

3:6-Anhydro-α-methylgalactopyranoside, 2-p-toluenesulphonate, A., II, 214.

Anhydromonocrotalamide, A., II, 147. Anhydromonocrotalic acid, A., II, 147. Anhydroribose, preparation of, A., II, 37.

Anhydroribose <1,5><1,4>, 2:3-diacetate, A., II, 37.

ac-Anhydro-D-sorbitol. See Polygalitol. γζ-Anhydro-D-sorbitol, A., II, 214. Anilides, aliphatic, solubilities of, A., I, 34.

formation of, by action of nitroso-derivatives on compounds containing an active methyl group, A., II, 224.

Aniline, dark-coloured, photochemistry of, A., I, 289.

determination in, of nitrobenzene, polarographically, C., 70.

homologues of, in coal tar, A., II, 95.

oxidation products of, polarography of, A., I, 156.

spectrum of, absorption, ultra-violet, A., I, 96.

Aniline, 2:3:5:6-tetrachloro-4-nitro-, amination of, A., II, 42.

2:4-dinitro-, determination and separation of, in D & C Orange No. 17, C., 119.

17a-Anilino-3(β)-acetoxy-17a-methyl-Dhomoætiocholan-17-one, and its nitroscamine, A., II, 141.

3-Anilino-1-acetyl-5-acetoxypyrazole, A., II, 59. 5-Anilino-1-acetyl-3-acetoxypyrazole, A., II, 59. 5-Anilino-1-acetylpyrazole, 3-hydroxy-, A., Il,

3-Anilino-1-acetyl-5-pyrazolone, A., II, 59.

5-Anilinoacridine, A., II, 24.

1-Anilino-2:3-benzanthraquinone, 1-o-amino-. 1-o-chloro-, and 1-o-nitro-, A., II, 60.

Anilinobenzanthrone, 3-o-amino-, 3-o-nitro-, A., II, 61.

3-Anilino-1-benzoyl-5-benzoyloxypyrazole, II, 59.

3-Anilino-5-benzoyloxypyrazole, A., II, 59. 3-Anilino-1-benzoyl-5-pyrazolone, A., II, 59.

1-Anilino-2:4-di-m-bromophenyl-6methylpyridinium iodide, A., II, 234.

Anilino-2:4-di-p-bromophenyl-6methylpyridinium iodide, 1-p-bromo-, A., II, 234.

1-Anilino-2:4-di-m-ehlorophenyl-6methylpyridinium iodide, A., II, 234. -Anilino-2:4-di-p-chlorophenyl-6-

methylpyridinium iodide, A., II, 234. a-Anilinodiphenylacetic acid, a-m-nitro-, A., II,

77. 3-Anilino-1:1-diphenylindane, and its hydro-

chloride, A., II, 193. 1-Anilino-2:2-di-o--p-tolylcarbamyl-

aziridines, A., II, 159. N-Anilinoformyl-N'-camphorylaminothioformylhydrazine, A., II, 232.

 β -Anilino- α -mesitylacrylonitrile, A., II, 263. 9-Anilino-2-methoxyacridine, 6-chloro-, A., II,

4-Anilino-6-methylpyrimidine, 2-amino-, A., II,

349. 3-Anilino-5-pyrazolone, acylation of, A., II, 58.

4-Anilinopyrimidine, 2- and 4-amino-, 4-o-, -m-, and -p-hydroxy-, and 4-2':6'-dihydroxy-, and their derivatives, A., II, 349.

2-amino-4-p-amino-, 4-p-acetyl derivative, dihydrochloride, A., II, 349.
2-Aniloacetylindole N'-oxide, A., II, 237.
2-Aniloacetyl-3-methylindole N'-oxide, A., II,

3-Aniloacetyl-2-methylindole N'-oxide, A., II, 237.

Animals, cave, pigmentation of, A., III, 260. colour changes of, and their neurohumors, A., III, 194.

effect on, of high-frequency waves, A., III. laboratory, effect of light on, A., III, 284. · small, preparation of, for analysis, C., 141.

Animals, species of, identification of, precipitating sera for, A., III, 94.

Animal tissues. See Tissues.

Anionotropic rearrangement, kinetics of, A., I, 286.

Aniseikonia, A., III, 182.

correction and measurement of, meridioncal magnifying lens system in, A., III, 726. criticisms of, A., III, 182.

o-Anisidinediazidocopper, A., I, 290.

9-p-Anisidino-2-methoxyacridine, 6-chloro-, A., II, 83.

hydro-4-p-Anisidinopyrimidine, 2-amino-. chloride, A., II, 349.

2-p-Anisidinotriphenylcarbinol, A., II, 276.

Anisole, chlorination of, A., II, 13. condensation of, with n-alkylsuccinic

anhydrides, A., II, 78. with cyclohexene oxide, 1:2-dichlorocyclohexane, and γδ-dichlorohexane, A., II, 257.

reaction of, with aaa-trichloro-β-methyl-Δβpropene, A., II, 89.
Anisole, 3-fluoro-, and 3-fluoro-2:4:6-trichloro-,

nitration of, II, 139.

2-iodo-4:6-dinitro-, A., II, 155.

2:4-dinitro-, determination in, of 1-chloro-2:4-dinitrobenzene, colorimetrically, C.,

determination of, colorimetrically, C., 118. o-p'-nitroamino-, o-p'-benzoyl derivative, A., II, 368.

Anisoles, halogenated, reaction of, with lithium phenyl, A., II, 114.

Anisotropy, diamagnetic, of crystalline liquids, A., I, 273.

N-Anisoylaspartic acid, A., II, 222.

 β -p-Anisoyl-a-ethyl-n-valeric acid, methyl ester, A., 11, 13.

γ-p-Anisoyl-δ-p-methoxybenzyl-n-hexane, II, 13.

o-Anisyl sulphate, p-bromoaniline salt, A., II, 256.

a-o-Anisylacetic acid, a-amino-, and its copper salt, A., II, 161.

y-p-Anisyl-α-alkylbutyrolactones, A., II, 259. y-p-Anisyl-a-n-amylbutyrolactone, A., II, 259. α-p-Anisyl-γ-m-anisylbutyronitrile, A., 11, 217.

p-Anisylanisylidenecrotonolactone, A., II, 94. a-o-Anisyl- β -p-anisylpropane- $\alpha\gamma$ -dione, and its copper salt, A., II, 224.

d-p-Anisyl-β-m-anisylpropionic acid, A., II, 130. N-p-Anisylanthranilic acid, methyl ester, A., II, 276.

m-Anisylbenzhydryl ether, A., II, 23.

p-Anisylbenzylidenecrotonolactone, A., II, 94. p-Anisylbis-p-diphenylylcarbinol, A., II, 258.

a-p-Anisyl-8-(2-bromo-3:4:5-trimethoxyphenyl)acrylamide, A., II, 314.

α-p-Anisyl-β-(2-bromo-3:4:5-trimethoxyphenyl)ethylene, a-cyano-, A., II, 314.

 α -p-Anisyl- Δ^{α} -butylene, β -nitro-, A., II, 13.

α-p-Anisylbutyric acid, and its amide, A., II, 217.

y-p-Anisylbutyric acid, A., II, 94.

 γ -p-Anisyl-n-bntyric acid, β -cyano-. A., II, 221. y-Anisyl-y-butyrolactone, reaction of, potassium cyanide, A., II, 221. with

a-p-Anisylbutyronitrile, A., II, 217. β -p-Anisylbutyrophenone, γ -nitro-, A., II, 81.

α-p-Anisyldeoxyanisoin, A., II, 129.

a-o- and -p-Anisyldeoxybenzoin, A., II, 129. γ -p-Anisyl- $\alpha\beta$ -diethyl- γ -butyrolactone, A., II, 13.

N-p-Anisyl-N'N'-diethylsulphamide, A., II, 364. 3-p-Anisyl-2:4-diketotetrahydroquinazoline, A., II. 274.

 α -o-Anisyl- β -3:4-dimethoxyphenylpropane- α ydione, A., II, 224.

N-p-Anisyl-N'N'-dimethylsulphamide, A., II, 364.

 β -p-Anisylethyl bromide, A., III, 856.

y-p-Anisyl-α-ethylbutyrolactone, A., II, 259. 2-Anisyl-3-ethylindone, and its phenyl-

hydrazone, A., 11, 163. p-Anisyl a-ethyl-p-methoxystyryl ketone, A., II,

 α -(p-Anisyl)hept- δ -en- β -yne- $\alpha\zeta$ -diol, A., II, 178.

 γ -p-Anisyl- α -n-hexadecylbutyrolactone, A., II, 259.

γ-p-Anisyl-α-n-hexylbutyrolaetone, A., II, 259. 1-p-Anisyl-4-3': 4'-di hydroxyphenacylpiperazine dihydrochloride, A., II, 236.

3:3'-p-Anisylidenebis-4-hydroxycoumarin, its dimethyl ether, A., II, 166.

Anisylidenecamphorylsemicarbazone, Α., II, 232.

a-p-Auisylidene-n-heptaldehyde, and its semicarbazone, A., II, 222.

p-Anisyl-d-mannamine, A., II, 72.

 γ -p-Anisyl-a-mesitylpropane- $a\beta$ -dione, γ -bromo-, A., II, 102.

a-p-Anisyl- γ -mesitylpropane- $\alpha\beta\gamma$ -trione, A., II, 102.

 γ -p-Anisyl- α -mesityl- $\Delta\beta$ -propen-a-one, β-hydroxy-, A., II, 102.

 $\beta\gamma$ -dihydroxy-, γ -acetyl and $\beta\gamma$ -diacetyl derivatives, A., II, 102.

 γ -p-Anisyl-a-4-methoxybenzyl-n-butyric A., 11, 94.

o- and p-Anisyl p-methoxystyryl ketone oxides, A., II, 224.

α-o-Anisyl-β-3:4-methylenedioxyphenylpropaneay-dione, and its copper salt, A., II, 224.

o-Anisyl-3:4-methylenedioxystyryl ketone oxide, A., II, 224.

 β -m-Anisyl- α -methylethylcarbamic N-β-chloro-, and N-chloro-N-β-chloro-, ethyl esters, A., II, 364.

1-p-Anisylmethyl-4- β -hydroxy-3':4'-

dihydroxyphenylethylpiperazine dihydrochloride, A., II, 236.

p-Anisyl a-methyl-p-methoxystyryl ketone, A., II, 13.

1-p-Anisylmethylpiperazine, dihydrochloride, A., II, 235.

 γ -p-Anisyl- β -methyl- Δ^{α} -propylene, aa-dichloro-, A., II, 89.

α-Anisyl-β-methylstilbene, A., II, 129.

a-p-Anisyl- β -(2-nitrotrimethoxyphenyl) ethylene, a-cyano-, A., II, 314.

o-Anisyloxysilan, trichloro-, A., II, 191.

3-m-Anisyl- Δ^2 -cyclopentenone-2-acetic acid, A., II, 18.

10-o-Anisylphenothiazine, 10-3'-nitro-, A., II,

10-p-Anisylphenothiazine, 10-3'-amino-, and 10-3'-nitro-, A., II, 353.

 α -p-Anisyl- Δ^{α} -propinene, A., II, 75.

-Anisylpropionic acid, a-cvano-, ethyl ester, and its hydrazide, A., II, 91.

γ-p-Anisyl-α-n-propylbutyrolactone, A., II, 259. α -p-Anisyl- Δ^{α} -propylene, β -bromo-, and α - and

β-chloro-, A., II, 75. 2-Anisyl-3-isopropylindone, and its phenyl-

hydrazone, A., II, 163. p-Anisyl a-n-propyl-p-methoxystyryl ketone, A.,

II, 13. p-Anisylpyruvic acid phenylhydrazone, A., II,

259.2-o-Anisylquinoline, and its derivatives, A., II,

309. 2-o-Anisylquinoline, 4-chloro-, and its picrate,

A., II, 309.

 γ -p-Anisyl-a-n-tetradecylbutyrolactone, A., II, 259.

p-Anisyl 3:4:5-trimethoxystyryl ketone, A., II,

Ankles, deformity of, after injury to tibia in growing children, A., III, 2.

Anodes, incandescent, use of, in spectroscopic isotope separation, A., I, 162.

zine, deposits on, in sodium hydroxide and sodium salt solutions, A., I, 42.

Anode effect, excitation of, A, III, 18. Anopheles annulipes as malaria carrier, A., III,

370.

quadrimaculatus, inheritance Anopheles susceptibility to malaria infection in, A., III, 143.

Anophthalmia, A., III, 801.

Anophthalmos, bilateral, congenital, A., III, 247.

Anorectal disease. See under Disease. Anoxemia, due to carboxyhemoglobin and methæmoglobin, A., III, 722.

Anoxæmia, protein content of extracellular fluid in, A., III, 525.

Anoxia, anoxic, recovery from, A., III, 722. blood-pressure response to, effect of carotid

ligation on, A., III, 647. cataract from, A., III, 182, 531.

cerebral, ether anæsthesia and, A., III, 360. cocarboxylase dephosphorylation in tissues during, A., III, 397.

effect of, on acetylcholine level in rat cerebral cortex, A., III, 179.

on metabolism of liver slices from fed and fasted rats, A., III. 35.

on sense organs, A., III, 403.

on survival period of infant and adult rats and cats, A., III, 12.

fish blood density during, A., III, 166.

lethal effects of, drug prophylaxis against, A., III, 329.

oxygen consumption of rat liver slices after, in vitro, A., 111, 346.

progressive, circulation time and venous pressure'during, in man, A., III, 398.

resistance to, after thiourea treatment and thyroidectomy, A., III, 534.

effect of fasting on, A., III, 578.

treatment of, with cardiac and respiratory stimulants, A., III, 722.

work performance under conditions of, effect of cobalt on, A., III, 630.

See also Respiration. helmintics, copper sulphate-nicotic sulphate solution, for lambs, A., III, 681. Anthelmintics, sulphate-nicotine

phenanthridinium, A., III, 211. phenothiazine, A., III, 134, 210, 759.

for lambs, A., III, 681.

potency of, chemotherapeutic investigation of, A., III, 428.

 β - and ψ -santonins, influence of, on Ascarides lumbricoides, A., III, 554. synthetic, A., II, 77, 259.

Antheraea pernyi, dry substance, nitrogen, and water changes in, during development, A., III, 348.

Anthochlor pigments. See under Plants, pigments of.

Anthocyanins, biochemistry of, A., III, 88. reactions of, with ammonium molybdate, A., II, 271.

Antholysis, biochemical changes in, A., III, 314. Anthoxanthins, biogenesis of, A., III, 312.

Anthracene, derivatives, A., I, 82. determination of, in tar and tar oils, C., 167. fluorescence of, A., I, 3.

in presence of naphthacene, A., I, 97. hydrogenation of, by tetrahydronaphthalene,

A., II, 254. spectrum of, fluorescence, A., I, 266.

Anthracene series, resonance in, in relation to labile state of oxygen in photo-oxides, A., II,

Anthracenedisulphonic acids, salts, solubilities of, A., I, 82.

Anthracenesulphonic acids, salts, solubilities in, A., I, 82.

Anthracite, determination in, of volatile matter, C., 67.

Anthracite dust, South Wales, effect of, on lung tumour incidence in mice, A., III, 663. Anthranil, reaction of, with maleic anhydride,

A., II, 84. Anthranil amides, A., II, 172.

Anthranil-n- and -iso-amylamides, A., II, 172. Anthranilbenzylamide, A., II, 172.

Anthranil-o-bromophenylamide, A., II, 172.

Anthranil-m-bromophenylamide, A., II, 172. Anthranil-n-butylamide, A., II, 172.

Anthranil-o-carbomethoxyphenylamide, A., II,

Anthranil-m-chlorophenylamide, A., II, 172. Anthranil-p-chlorophenylamide, A., II, 172.

Anthranildiethylamide, A., II, 172. Anthranildi-n-propylamide, and its picrate, A.,

II, 172. Anthranilcyclohexylamide, A., II, 172. Anthranilhydroxyamide, A., II, 172.

Anthranilic acid, growth promotion of lactic bacteria with, A., III, 147.

Anthranil-6-methyl-2-benzthiazolylamide, A., II, 172.

Anthranil-4-methyl-2-thiazolylamide, A., II, 172.

Anthranilphenylethylamide, A., II, 172. Anthranilphenyliminoamide, A., II, 172. Anthranilphenyl-n-propylamide, A., II, 172. Anthranilpheridylamide, A., II, 172.

Anthranil-n-propylamide, A., II, 172. Anthranil-2-pyridylamide, A., II, 172. 2- μ -Anthranylquinoline, A., II, 379.

Anthraquimone, crystals, growth of, on antimony, A., I, 79. Anthraquinones, hydroxy-, salts of, structure of,

A., II, 227. 3(a)-Anthraquinone-2'-carboxybisnorcholanic

acid, $12(\beta)$ -hydroxy-, methyl ester, A., II, 265. $12(\beta)$ -Anthraquinone-2'-carboxybisnorcholanic acid, 3(a)-hydroxy-, 3(a)-acetyl derivative, methyl ester, A., II, 265.

Anthraquinone-1-carboxylactones, and their lactones, structure of, A., II, 227.

Anthrax, anti-sera against, precipitation of, by agar solutions, A., III, 696. cutaneous, A., III, 507.

immunisation against, A., III, 561.

Anthropology, of Shans, and their geographical environment in South West Yunnan, A., III, 628.

physical, as a technique, A., III, 389. future of, A., III, 389.

1-Anthroylmethylpyridinium perchlorate and iodide, A., II, 347.

2-\(\rho\)-Anthryleinchonic acid, A., II, 379. Antibacterials, formation of, by moulds, A., III,

368. in green plants, A., III, 443.

Antibiotics, A., III, 88, 559, 843.

bactericidal and bacteriostatic properties of, A., III, 435.

formation and strain-specificity of, A., III, 69. gliotoxin, A., III, 613.
penicillin, A., III, 606.
production of, and strain specificity, A., III,

692.

protection with, against influenza virus, A., III, 829.

Antibodies, A., III, 304.

denaturation of, A., III, 846.

formation of, after injection of pneumococcus or streptococcus vaccine, A., III, 223. precipitation of, by antigens, A., III, 850. purification of, A., III, 704.

relation of, to antigens, picture of, A., III, 226.

by histamine, induced to histamine conjugates, A., III, 280.

Anticoagulants, treatment with, of arterial embolism of extremities, A., III, 527. Anticonvulsants, A., II, 306.

Anti-detonators, operation of, theory of, A., I, 179.

Antigens, A., III, 304.

atomised fluid, inhalation of, hypersensitivity from, A., III, 439.

cellular, in cattle blood, A., III, 226.

ystalline, labelled, preparation properties of, A., III, 305. crystalline,

Mazzini, flocculation tests with, A., III, 305. multiple, for active immunisation, A., III,

precipitation of, by antibodies, A., III, 850.

relation of, to antibodies, picture of, A., III, 226.

Antigen-antibody complex, fixation to, components of complement, A., III, 698. non-dissociation of, by amino-acids, A., III, 700.

Antimalarials, A., II, 23, 56.

action of, A., III, 831. activity of, in man, monkeys, and birds, A., III, 279.

atebrin, A., III, 680.

quinine derivatives, A., III, 680. synthetic, search for, A., III, 551.

Antimonials, organic, toxicity and trypanocidal activity of, A., III, 835.

Antimony, films, with easium, conductivity of, A., I, 39.

growth on, of anthraquinone crystals, A., I,

isotopes, γ -rays from, energy of, A., I, 76. optical constants of, A., I, 273.

spectrum of, β -ray, A., I, 26. Antimony alloys, with cobalt and iron, and with nickel and iron, A., I, 244.

with cobalt, with iron, and with nickel, A., I, 170. with copper, determination in, of copper,

C., 4.

with copper and nickel, analysis of, C., 11. with iron and nickel, phase transitions in, A., I, 102.

structure of, A., I, 272. with lead, lead-rich, A., I, 221. with lead and silver, A., I, 57.

Antimony pentachloride, spectrum of, Raman, A., I, 192.

trifluoride, structure of, X-ray, A., I, 216. monoxide, spectrum of, ultra-violet, A., I, 96. sesqueoxide, darkening of, by ultra-violet light, A., I, 67.

Stibnates, crystal structure of, A., I, 216. Antimony organic compounds with glyoxylic and oxalic acids, A., II, 320.

Antimony determination :-

determination in, of copper and lead, C., 3. determination of, C., 159.

in antimony-copper-nickel alloys, C., 11. in electrolytic baths and in zinc, C., 63. in lead and its alloys, C., 10.

Antioxidants, physiological, A., II, 319. Antiparasitics, non-metallic compounds as, in tropical diseases, A., III, 836.

organometallic compounds as, A., III, 836. wartime and public health need for, in tropical diseases, A., III, 836.

Antiplasmodial action, contitution and, A., II. 356.

Antipyresis, aspirin, in monkeys, A., III, 134. hypothalamic control of, A., III, 581. Antipyrine, compound of, with cholesterol, A.,

I, 176. Antipyrine, amino-, condensation of, A., II, 25; C., 22, 23.

Antiscorbutics, bioassay of, A., III, 674. Antiseptics, acidity and efficiency of, A., III, 435.

acridine, A., III, 607. action of, effect of oxygen on, A., III, 828.

on epithelial tissue growth, A., III, 209; C., 78. evaluation of, A., III, 56.

intestinal, sulphanilamide group, A., II, 25. phemerol, for skin, A., III, 553. phenol coefficients and plate tests of, C., 138. toxicity of, A., III, 428.

Antisera, heterogeneous, precipitation of, by antigens and its inhibition by haptens, A., III, 779.

preparation and precipitation of, A., III, 622. Rh, production of, by guinea-pig inoculation with human erythrocytes, A., III, 163.

standardisation of, A., III, 622. Antispasmodics, A., II, 14, 15, 306, 335. 4-morpholinoalkyl esters, A., III, 760. synthetic, A., III, 134.

Anti-sulphonamide action, A., III, 757. Antisyphilitics, organic, synthetic, A., III, 136. Antithrombin, relation of, to immunity, and reticuloendothelial system, A., III, 523.

Anti-thyroid activity, assay of, C., 175. Antivenene, cobra, standardisation of, A., III,

Antonoff's rule, A., I, 83, 152, 246. Anura, adult, limb regeneration induction in, A.,

III, 571. Anuria, after manual removal of placenta and

blood transfusion, A., III, 170. due to sulphapyridine calculi treated by ureteric catheterisation, A., III, 56. in shock, A., III, 720.

Anxiety, states of, in the Navy, A., III, 180. symptoms, diagnosis, production, and treatment of, A., III, 100.

Aorta, abdominal, aneurysm of, and rupture into jejunum, A., III, 639. saccular, A., III, 14. embolism and thrombosis of, A., III, 798.

occlusions of, A., III, 172. visceral branches of, A., III, 1.

aneurysm of, rupture of, into pulmonary artery, A., III, 243. arteriosclerotic, unsaponifiable lipoids from,

A., II, 104. cholesterol content of, effect of estradiol dipropionate and testosterone propionate

on, A., III, 344. reactions of, in hæmorrhagic hypotension and shock, A., III, 244.

rigidity of, ratio of, to peripheral resistance, A., III, 98.

rupture of, not followed by dissecting ancurysm, A., III, 99.

Apatite, Chibiny, A., I, 91.

Apes, anthropoid, diastemata variation in dentition of, and its relation to origin of man, A., III, 520.

Aphakia, unilateral, uncorrected, function of retina periphery in, A., III, 585.

Aphids, growth, longevity, and reproduction in, A., III, 194.

sex determination in, A., III, 319.

wing development of, response to temperature in, A., III, 159.

Apis mellifica, queen, artificial insemination of, A., III, 628.

Apoda, spermateleosis in, volume relations of nucleus in, A., III, 788.

Apodipeptidase, A., III, 287.

Appendicitis, acute, perforated, treatment of, with sulphathiazole in children, A., III, 208.

treatment of, intra-abdominal application of sulphanilamide in, A., III, 255.

with sulphathiazole, A., III, 54, 277. Appendix, abscess in, Pastcurella septica isolated from, A., III, 846.

mucocoele of, and pseudomyxoma peritonei, A., III, 473.

Apples, blister spot disease of, A., III, 616. Jonathan, respiration of, A., III, 227. maturity of, in relation to transpiration, A., TII. 853.

stored, vitamin-C synthesis in, A., III, 488. tissues, determination in, of sugars, C., 31. vitamin-C in, A., III, 127.

xanthone spray residues on, analysis of, C., 90. Apple trees, dormant, nitrogen intake of, A., III, 853.

Icaves, ashing of, for detection of magnesium and potassium, A., III, 156.

assimilation of, A., III, 308.

autumn, cation distribution in, A., III, 88. photosynthesis, respiration, and transpiration of, after root submersion, A., III, 439. shoots, effect on, of naphthoxy- or naphthylacctic acids, A., III, 782.

d(-)-Arabinose, 2:4-dinitrophenylosazone, A., II, 85. β -D- and β -L-Arabinoses, tetra-p-benzene-

azobenzoates, A., II, 6.

l-Arabinose-p-tolylamine, A., II, 72.

d-Arabobenziminazole, and its picrate, A., II, 37. d-Arabonitrile tetraacetate, A., II, 321.

Arachis hypogæa, analysis and preparation of, C., 81.

proteins, determination in, of tryptophan and tyrosine, C., 181.

response of, to light, A., III, 84. Arachis oil, analysis of, C., 171. determination of, C., 25.

Arachnodactyly, A., III, 2. pneumoencephalography of, in siblings, A., III. 786.

Arachnoiditis, A., III, 22.

Aralkylcarbamides, A., II, 255.

Arbacia punctulata, eggs, cell division and oxygen consumption in, effect of azide and sulphanilamide on, A., III, 761. effect of urethane and chloral hydrate on,

A., III, 761. Argemone hispida, constituents of, A., III, 707.

Arginase, liver .. See under Liver. Arginine, determination of, C., 92. dietary, effect of, on vitamin- B_4 deficiency in chick, A., III, 46. Argon, electron mobility in, A., I, 186. entropy of, A., I, 155. solid, potential energy and thermodynamic properties of, A., I, 214. Argyrol, allergy to, A., III, 136. Aribofiavinosis, as cause of vernal conjunctivitis, A., III, 529. ocular rosacea in, A., III, 584. Armadillo, brain of. See under Brain. Army camps, analysis in, of sewage, C., 138. Aromatic compounds, box model for, A., II, 124. effect of, on ascorbic acid content of mouse liver, A., III, 658. internal rearrangement in, A., II, 205. photochemistry of, A., I, 255. sulphonation of, A., I, 286. See Ovaries, tumour of, Arrhenoblastoma. masculinising. Arsenates. See under Arsenic. Arsenic, isotopes, radioactive, β- and γ-rays from, A., I, 94. poisoning by. See under Poisoning. Arsenic compounds, disposition of, in silkworms, determination of, A., III, 348. effect of, on erythropoiesis, A., III, 6. on yeast growth, A., III, 692. Arsenic trahydride, determination of, iodometrically, C., 110. disulphide, structure of, from electron diffraction, A., I, 217. trisulphide. colloidal, sols, coagulation of, electrolyte adsorption in, A., I, 83. structure of, from electron diffraction, A., I, Arsenates, effect of, on lead storage, A., III, separation of, from arsenites in blood and urine, C., 174. Arsenites, separation of, from arsenates in blood and urine, C., 174. Arsenic organic compounds Arsenic methyl halides, structure of, from electron-diffraction, A., I, 167. Arsenic determination :determination of, C., 10. electrolytically, C., 63. in absorbent solutions, in sulphur paste and in molten sulphur, C., 10. in biological materials, C., 41, 190. in body fluids, C., 190. in gases of sulphuric acid plants, C., 11. in glass, C., 11. in hair lotions, C., 87. in insecticides, C., 189. in lead and its alloys, C., 10. in sulphur, C., 10. microchemically, by Gutzeit spot-filtration, C., 159. tervalent, polarographically, C., 10. Arsenicals, action of, compared with sulphonamides, A., III, 132. organic, detoxification of, A., III, 684. Paramecium caudatum as test animal for, A., III, 361. structure of, A., III, 213. toxicity of, pharmacological basis for, A., III, 609. Arsenicals, amidino-, A., II, 241. Arsenites. See under Arsenic. Arsen ocholine, interrelation of betaine, choline, methionine and, in chicks, A., III, 484. p-Arsenoxidobenzenesulphonamidoacetamide, A., II, 242. 5-Arsenoxidoisophthalic acid, and its dimethyl ester and its diamide, A., II, 242. p-Arsenoxido-" a "-tolusmidoscetamide, A., II, p-Arsinibenzimino-ether hydrochloride, A., II, Arsinobenzimino-ethyl ether, p-dichloro-, hydrochloride of, A., II, 243. p-Arsinobenzonitrile, A., II, 243. Arsinophenol. 5-amino-4-dichloro-, hydrochloride of, A., II, 243.

4-Arsinoxidobenzamide, 2-nitro-, A., II, 242. β-p-Arsinoxidobenzamidopropionamide, A., II, 242. p-Arsinoxidobenzcyanomethylamide, A., II, 243. p-p'-Arsinoxidobenzeneazobenzamide, A., II, 243. p-p'-Arsinoxidobenzeneazobenz-β-hydroxyethylamide, A., II, 243. p-Arsinoxidobenz- β_{γ} -dihydroxypropylamide, A., II, 243. p-Arsinoxidobenzimino-ethyl ether, A., II, 243. p-Arsinoxidobenzoylcarbamide, and its derivatives, A., II, 242. N-p-Arsinoxidobenzoylcarbamide, A., II, 242. N-p-Arsinoxidohippurylglycine, and its amide, methyl ester, and silver salt, A., II, 242. 6-Arsinoxidoisophthalamic acid, A., II, 242. 4-Arsinoxidosalicylamide, A., II, 242. 5-Arsinoxidosalicylamide, A., II, 242. 4-Arsinoxidoterephthalic acid, A., II, 242. p-Arsinoxido-"a"-toluoylearbamide, A., II, 242. Arsinoxyoxidoanilinoacetcarbamide, A., II, 242. Arsonic acids, aliphatic, A., II, 175. p-Arsonoanilinomalondibenzylamide, A., II, 175. p-Arsonoanilinomalondi-p-bromoanilide, A., II, p-Arsonoanilinomalondi-p-toluidide, A., II, 175. p-p'-Arsonobenzeneazobenzoic acid, A., II, 243. 2-Arsonobenzoic acid, 5-amino-, A., II, 242. 4-cyano-, A., II, 242. 4-Arsonobenzoic acid, 1-naphthyl ester, A., II, a-p-Arsonobenzoyibiuret, A., II, 242. N-p-Arsonobenzoylcarbamide, A., II. 242. 4'-Arsonodiphenyl sulphide, 4-nitro-, A., II, 283. 4-amino-, 4'-Arsonodiphenylsulphone, 4-amino-, A., II, 283. 6-Arsonoisophthalamic acid, A., II, 242. 5-Arsonosalicylic acid, methyl ester, A., II, 242. 4-Arsonoterephthalamic acid, A., II, 242. p-Arsonoterephthalanilic acid, A., II, 243. Arsphenamines. See Salvarsan. Arteries, cerebral, development of, in relation to congenital aneurysms, A., III, 2. coeliac, syphilitic aneurysm of A., III, 172. coronary, blood flow augmentation in, with ventricular pressure elevation, A., III, branches of, inflammation in, after foreign protein injection, A., III, 576. in avian heart region, A., III, 446, 569. innominate, gunshot wound of, A., III, 172. main, in heart region, A., III, 385 peripheral, flow patterns in, A., III, 396. flow and pattern responses in, to vasomotor drug injection, A., III, 396. popliteal, occlusion of, diagnosis and treatment of, A., III, 798. pulmonary, congenital dilatation of, A., III, 15. idiopathic dilatation of, diagnosis of, A., III, 525. structure and development of, in guineapigs, A., III, 711. renal, main, obstructive lesions of, in relation to hypertension, A., III, 526. small, irradiation of, foam cell plaques due to, A., III, 837. vasomotor disturbances in, after peripheral nerve section, atiology of, A., III, 327. vertebral, aneurysms of, actiology of, A., III, wall of, impulse conduction in, A., III, 171. Arthritis, atrophic, amyloidosis in, A., III, 52. due to Streptobacillus moniliformis in chick embryo, A., III, 774. hip. See under Hip. pathology of, A., III, 513. physical therapy for, A., III, 63. rheumatoid, A., III, 301. calcium and phosphorus metabolism in, A., III, 276. treatment of, with gold, A., III, 281, 835. Aryl sulphates, p-bromoaniline salts of, A., II, 256.

II. 97.

Arylacetonitriles, reaction of, with formamide, A., II, 349. β -Arylacrylic acids, β -substituted, synthesis of, A., II, 98, 132. a-Arylaminoethanols, βββ-trichloro-, A., II, 157. 1-Arylaminopyridines, A., II, 234. Arylaminopyrimidines, A., II, 348. 4-Arylazo-1-arylpyrazol-5-one-3-carboxylic acids, ethyl esters, A., II, 331. 5-Arylazo-8-hydroxyquinolines, and their hydrochlorides, A., II, 144. 3-Arylazopyridines, 2:6-diamino-, hydrochlorides of, A., II, 111. Arylcarbamides, A., II, 255. Aryldiazonium cobaltinitriles, A., II, 96. Arylethylenes, spectra of, absorption, ultraviolet, A., I, 28. 5-Arylhydantoins, A., II, 161. Arylolefines, restricted rotation in, A., II, 98, 2-Arylquinolines, from fluoranthene and thionaphthen, A., II, 379. Arylsulphonic acids, rylsulphonic acids, o-nitrophenyl reduction products of, A., II, 97. Asbestos textiles. See under Textiles. Asbestosis, pulmonary. See under Lungs.
Ascarios, infestation by, asthma produced by, A., III, 799. Ascaris lumbricoides, antigenic analysis of fluids and tissues of, A., III, 80. eggs, irradiation of, A., III, 687. influence of β - and ψ -santonins on, A., III, Ascaris suum, polysaccharide from, inhibition of human isoagglutinins by, A., III, 715. Ascidians, vanadium in, A., III, 541. Ascitic fluid, isoagglutinins of, inactivation of, A., III, 454. Asclepain, isoelectric point of, A., I, 126. Ascorbic acid, autoxidation of, A., I, 42. catalytic, effect of ions on, A., III, 48. in presence of copper, A., I, 228, 254. in presence of molybdic acid, tungstic acid, and vanadic acid sols, A., I, 253. capillary resistance and, A., III, 488. choline-esterase and, A., III, 271. colour reaction of, with nicotinamide and nicotinic acid, A., III, 488. with piperidine, pyridine, quinoline, and isoquinoline derivatives, A., III, 488. compound related to, scurvy-like condition produced by feeding, A., III. 127. content of, in cow's milk, A., III, 824. crystalline, preparation of, from walnut extracts, A., III, 548. determination of, and its derivatives, in biological fluids, C., 85. in blood, C., 27, 77. in plant materials, C., 90. in plant tissues, with 2:4-dinitroplienylhydrazine, C., 139. in presence of reductones, C., 35, 85. in presence of sulphur dioxide, C., 85. in urine, C., 29. with methylene blue, C., 183. distribution of, in potatoes, A., III, 48. effect of, on chick growth, A., III, 548. on muscle fatigue, A., III, 330. effect on, of X-rays, A., III, 284. excretion of, urinary, effect on, of estradiol in dogs, A., III, 109. failure of, to augment equine gonadotropin in rats, A., III, 594. formation of, in wheat seedlings, A., III, 705. histological demonstration of, A., III, 320. in adrenals. See under Adrenals. in liver, in mice, A., III, 665. effect on, of aromatic compounds, A., III, 658. in pasteurised and raw milk, A., III, 125. in plant nutrition, A., III, 314. in rat leprosy, A., III, 674. in sweat, A., III, 477. in tumours. See under Tumours. in vegetables. See under Vegetables. injection of, response to, indicated by its vinvl ethers, syntheses and properties of, A., urinary excretion, A., III, 603.

Ascorbic acid, iron salt, assay of, A., III, 674. level of, effect on, of antineuralgic medication, A., III, 683.

metabolism of. See under Metabolism. oral and parenteral administration

effectiveness of, A., III, 674. oxidation of, in fat systems, in presence and

absence of benzoquinone, A., I, 157.

plasma. See under Blood-plasma.

polarography of, A., I, 284.

protective action of, in anaphylactic shock in guinea-pigs, A., III, 674.

relation of, to anaphylactic shock in isolated organs, A., III, 674.

to breeding in horse, A., III, 355.

to industrial lead absorption, A., III, 127. requirements of, clinical study of, A., III, 353. for man, in relation to metabolic rate, A., III, 201.

for school-girls, A., III, 201. minimum, for adults, A., III, 488. saturation test for, A., III, 548.

sodium salt, effect of, on survival after arsenic, barium, lead, mercury, and phosphorus poisoning, A., III, 684.

synthesis of, effect of physiological disturbances on, in rats, A., III, 271. oxidising activity of plant tissues in, A., III,

treatment with, of anæmia in school-children,

A., III, 239.

of infective hepatitis, A., III, 36. of methemoglobinamia, A., III, 523.

variations in, due to season, sunlight, and temperature, A., III, 674.
See also Vitamin-C.

L-Ascorbic acid, determination of, C., 35. effect of, on epithelial sheets in tissue culture, A., III, 521.

on isolated frog's heart, A., III, 13, 169. fatty acid mono-esters, A., II, 120. d-isoAscorbic acid, and its sodium salt, anti-

oxidant properties of, A., III, 825.

fatty acid mono-esters, A., II, 120. Ascorbic oxidase. See under Oxidase. Asebotin, synthesis of, A., II, 362. Ashing of materials, C., 197.

Asparagine, nicotinamide from, isolation of, A., II, 274.

Asparagus, composition and growth of, A., III, 311.

Asparagus juice, use of, in microbiological culture media, A., III, 434.

Aspartic aminopherase. See under Aminopherase.

Aspergillus, species, genetic changes induced in by chemicals, A., III, 367.

Aspergillus clavatus, antibacterial substances from, A., II, 376.

clavacin from, A., III, 841.

Aspergillus flavipes, cultures of, antibacterial filtrates from, A., III, 433.

Aspergillus flavus, A., III, 559. antibiotics from, A., III, 692.

culture of, submerged, antibiotic from, A., III, 140.

Aspergillus flavus-oryzæ, antibacterial activity of, A., III, 69.

Aspergillus fumigatus, antibiotics produced by, A., III, 692.

culture filtrates of, A., II, 208.

Aspergillus niger, acid formation by, effect of trace elements in tap-water on, A., III,

from sugar, A., III, 69, 501, 502. in shaken cultures, A., III, 68.

culture of, in acetate solutions, A., III, 68. growth of, effect on, of trace elements in exclusion of carbon dioxide, A., III, 219. mutations in, after cathode-ray bombard-ment, A., III, 289.

oxalio acid formation by, A., III, 219.

Asphalt, determination of, in bituminous emulsions, C., 68. fractionation of, C., 164.

Asphyxia neonatorum, production of, effect of anæsthesia and analgesia in, A., III, 799. severe, late effects of, A., III, 399.

Aspirin, hypersensitivity to, bundle branch block and nodal rhythm after, A., III, 719.

poisoning by. See under Poisoning.
Assimilation, plant. See under Plants.
Astacene, identity of, with ouglenarhodone, A., III. 444.

Asterias forbesi, sterols from, A., II, 340.

Asthenia, chloride excretion test in, A., III, 414. electrolyte changes in hypophysectomised toads in, A., III, 590.

neurocirculatory, A., III, 172.
Asthma, bronchial, blood pressure in, effect of adrenaline and aminophyllin on, A., III,

pulmonary pathology in, A., III, 723. Weltmann reaction in, A., III, 723. effect on, of morphine, A., III, 135.

inhalation of adrenaline in glycerin in, A., III,

intractable, bronchial relaxation induced in, A., III, 723.

moulds in relation to, A., III, 559. produced by Ascaris infestation, A., III, 799. vascular changes in, A., III, 722.

Weltmann reaction in, A., III, 851.

Astrakhanite, epsomite and Glauber's salt from,

Astrakhanite salt root, solubility of, in salt solutions, A., I, 258.

Astronomy, stochastic problems in, A., I, 164. Atabrine. See Atebrin.

Ataxia, acute, of unknown origin, in children, A., III, 644.

Atebrin, antagonism to, of spermine and spermidine, A., III, 846. detection of, C., 36.

determination of, in biological material, C., 36. distribution and excretion of, in experimental animals, A., III, 359.

dosage with, blackwater fever after, A., III, 428.

effect of, on choline deficiency in rats, A., III, 419.

on electrocorticogram, A., III, 680. on urinary porphyrin output in rats, A., III,

methanesulphonate, intramuscular injection of, A., III, 56.

plasmodocidal effect of, on Plasmodium lophuræ, A., III, 56. products of, urinary excretion of, A., III, 359.

spectrum of, fluorescent, A., I, 164. tolerance to, nutrition and, A., III, 552.

toxicity of, A., III, 428, 551. in growing cats, A., III, 209.

urinary excretion of, A., III, 680. Atheroma, cholesterol lysis in, A., III, 396. Atherosclerosis, experimental, in chick, A., III,

Athlete, young, death of, adrenaline in relation to, A., III, 108.

Athlete's foot, treatment of, cotton hose as vehicle for a fungicide in, A., III, 831. Athletics, fitness tests for, A., III, 282.

Atisine, hydrocarbon from, by dehydrogenation, oxidation of, A., II, 206.

Atmosphere, determination in, of organic solvent vapours, C., 88. hot, humid, effect of, on man, relieved by

cooling isolated parts, A., III, 611. iodine in, A., I, 256.

100% oxygen, lowest barometric pressure compatible with life in, A., III, 100 ozone concentration in, measurement of, C.,

ozone height in, A., I, 134. pressure of. See under Pressure.

upper, A., I, 207. microbiology of, A., III, 145. See also Air.

Atoms, constants of, A., I, 185. heavy, ionisation of, A., I. 261.

hydrogen-like, spectra of, continuous, A., I,

jet of, optical life-periods in, A., I, 114. life of, A., I, 52.

multiply-ionised, energy of, from crystal spectrography, A., I, 209.

Atoms, nuclei, disintegration of, in cosmic rays, A., I, 163.

field theories of, A., I, 140.

interaction of, mesotron-pair theory of, A., I, 234.

isomerism of, A., I, 76.

poly-electron, variables separation in calculations on, A., I, 115. radii of, from atomic and quantum numbers.

A., I. 140. reactions with, apparatus for, A., I, 186. statistical theory of, A., I, 140.

bivalent, isomorphous replaceability of, in

organic compounds, A., II, 29. vortex, A., I, 115.

ψ-Atoms, isomorphous replaceability of, in organic compounds, A., II, 29. Atomic number, relation of, to electronogativity,

A., 1, 143.

Atomic weight, of nitrogen, A., I, 188. of samarium, A., I, 94.

Atomic weights, report on, A., I, 1.

Atopy, contact reactions in, A., III, 851.

Atoxyl, reaction of, with halogen derivatives of substituted amides of malonic acid, A., II,

therapeutic action of, A., III, 209. Atresia, duodenal. See under Duodenum. ileum. See under Ileum.

œsophagal. See under Œsophagus.

Atrolactic acid, aminoalkyl and dialkylaminoalkyl esters, salts of, A., II, 46.

Atropa acuminata and belladonna, activity of, biological and chemical assay of, C., 136.

Alropa belladonna, hyoscyamine synthesis in, A., III, 312.

Atropine, activity of, compared with hyoscine, l-hyoscyamine, and homatropine, on smooth muscle, A., III, 832.

as antagonist to acetylcholine, compared with curare, A., III, 759.

effect of, on absorption of sugars from intestine in guinea-pigs, A., III, 192. on atrophy and neuromuscular regeneration,

A., III, 176.

on vitamin-A absorption, A., III, 192. transference of, from stock to scion, A., III,

Aubepin, formation of, by enzymes, A., III, 286. Auerbach's plexus, response of, to Trichocephalus invasion in sheep, A., III, 247. Aurora, spectrum of, A., I, 2. Auroxanthin, A., II, 271.

Austenite, activities of components in, A., I, 249. retained, determination of, by X-rays, C., 15. supercooled, separation of carbides from, A., I,

Austroicetes cruciata, eggs, elimination of diapause from, in Western Australia, A., III, 628.

Autoclaves, laboratory, C., 49. Autofundoscopy, A., III, 335. Autohæmagglutination, A., III, 9. Auxins, A., III, 782. action of, A., III, 86, 442.

on protoplasmic streaming, A., III, 783.

detection and determination of, in organic manure, C., 40, 188.

extraction of, and their precursors, from plant tissues, A., III, 708.

Auxithals, synthesis of, by fungi, A., III, 69. Avena, coleoptiles, auxins, tropisms in, A., III, 382. growth, and

peptidase in, A., III, 66.

seedlings, niacin, riboflavin and thiamin in, A., III, 854. Avena sativa, seedlings, growth of, effect of purines on, A., III, 382.

Aviation, high altitude, medical aspects of, A., III, 17.

See also Airmen.

Aviators. See Airmen.

Avidin, treatment with, of cancer, A., III, 821. See also Egg-white.

Avitaminosis, oro-genital syndrome in, treatment of, with vitamin-B, complex, A., III,

Sec also Vitamins.

Avitaminosis- B_1 , oral lesions in, prevention of, in dogs, A., III, 487. urocanic acid decomposition and, A., III,

45.

Avitaminosis-K, rôle of oxidised part of vitamin-K in, A., III, 489. Avocados, Californian, chlorophylls-a and -b in,

and their determination, C., 181. Axerophthal. See Vitamin-A aldchyde.

Axinite, "Julia" mine, Khakas province, A., I, 295.

Axolotls, morphogenesis in, under influence of derivatives of hydrolysed cartilage, A., III,

regenerative processes and tumour growth

mechanisms in, A., III, 92. 1-Aza-anthraquinone, 6-nitro-, A, II., 275. dinitrophenyl7-Aza-5:6-benzhydrindone, hydrazone, A., II, 57.

Azeotropic solutions. See under Solutions. Azides, ion discharge in solutions of, A., I, 284. photolysis of, in aqueous solution, A., I,

Azidocuprates, A., I, 182.

Azino-silver chloride, A., I, 23.

Azlactones, from substituted vanillins, formation and properties of, A., II, 59. metabolism Azobenzene, of. under

Metabolism. Azobenzene, pp'-dihydroxy-, dialkyl ethers, A.,

II. 14.

Azobenzene-2:2'-disulphinic acid, and its derivatives, A., II, 368.

p-Azobenzene-4'-sulphonic acid, p-5-amino-2hydroxy-, and its derivatives, A., II, 243. 2-Azobenzthiazole, A., II, 146.

6:6'-dibromo-, 2-Azobenzthiazole, 6:6'-dichloro-, A., II, 146.

Azochloroamide, bacteriostatic activity of, A., III, 694.

Azo-compounds, determination in, of nitrogen,

metabolism of. See under Metabolism.

Azodicarbonates, decomposition of, catalytic, A.,

Azo-dyes, A., II, 111, 144; III, 295.

determination in, of azo- and diazo-groups,

fluorene, preparation of, A., II, 45. lead, A., II, 88.

phenolic, synthesis of, from sulphonamides, A., II, 368.

Azo-dyes, hydroxy-, structure of, and absorption spectra, A., II, 192.

Azolla filiculoides, growth of, effect of light and temperature on, A., III, 230.

in mineral solution, A., III, 231. 1:1'-Azonaphthalene, 4:4'-dinitro-, preparation of, A., II, 96.

Azo-p-naphthol dyes, properties and structure of, A., II, 368.

Azophenyl ethers, homologues of, A., II, 14.

Azosulphamide, treatment with, of epilepsy, metabolism during, A., III, 645.

Azotæmia, alimentary, A., III, 12.

Azotobacter, hydrogenase activity and nitrogen

fixation by, A., III, 296. nitrogen fixation by, A., III, 561.

respiration of, apparatus for study of, A., III, 695.

Azotobacter agile, growth of, effect of copper and iodine on, A., III, 844.

Azotobacter vinelandii, nutrition of, free and combined nitrogen in, A., III, 72.

-Azoxybenztriazole, 6:6'-dibromo-,

2-Azoxybenztriazole, 6:6 6:6'-dichloro-, A., II, 146.

Azoxyphenyl ethers, homologues of, A., II, 14. p-Azoxyphenyl dialkylethers, A., II, 14. Azoxysulphones, A., II, 331.

Babbitt metal, lead- and tin-base, determination in, of copper and tin, C., 4. tin-containing, determination in, of copper and lead, C., 3. Babcock test, C., 130.

Babesiella berbera, infections by, blocking brain capillaries by parasitised red blood cells in, in cattle, A., III, 278.

Baboons. See Papio hamadryas.

Bache, Franklin, A., I, 133.

Bacilli, acid-fast, counterstain for, A., III, 390. coli-typhoid, growth of, medium for, A., III,

coliform, agglutinogen common to, A., III. 771.

antigenic relationships of, A., III, 771. classification of, in sputum, A., III, 845. detection of, in water, lauryl sulphatetryptose broth for, C., 39.

ecology of, A., III, 771. colon, citrate utilisation by, medium for determination of, A., III, 562.

diphtheria, attenuation and toxin production of, A., III, 299.

cultures, synthetic products from, A., III, 299.formalin-treated filtrate from, for protection

of kidney from uranium, A., III, 212. polysaccharide from, A., III, 299.

pterin-like pigments in ultra-filtrates from, A., III, 772.

dysentery, detection of, serologically, A., III, 772.

isolation of, medium for, A., III, 772. nicotinamide requirement of, A., III, 73. enteric, identification of, medium for, A., III,

heat resistance of, A., III, 619.

intestinal, hydrogen sulphide formation by, A., III, 436.

Lemoigne's, action of, on pyruvic acid, A., III, 845.

Lemoigne's M, β -hydroxybutyric production by, A., III, 771.

paracolon, bacteriostatic activity of sulphonamides on, A., III, 843.

distinction of, from Salmonella, medium for, A., III, 699.

para-influenza, hæmolytic, L-type growth of, A., III, 563.

paratyphoid B, typing of, by means of vi bacteriophage, A., III, 75. spores, action of iodine-potassium iodide on,

A., III, 294.

subtilis group, penicillinase production by, A., III, 843. tubercle, artifacts in stained preparations of,

A., III, 848.

bovine, growth of, promoted by pyruvate, A., III, 509.

culture media for, A., III, 620.

demonstration of, in tissue by fluorescence microscopy, A., III, 6. detection of, by fluorescence microscopy,

A., III, 509.

in air and dust, A., III, 509. in gastric contents, A., III., 848.

inoculation of, pleural effusions caused by, A., III, 700.

lipins of, chemistry of, A., II, 319; III, 848.

metabolism of, A., III, 619.

pigment formation by, in presence of p-aminobenzoic acid, A., III, 509.

polysaccharide from, A., III, 619.

survival of, in solutions of glycerol or its oxidation products, A., III, 510.

tuberculin activity in cultures of, A., III, 77.

virulence of, A., III, 301. typhoid, suspensions of, for V agglutination

test, A., III, 373.

toxins secreted by, A., III, 849. Whitmore's, biochemistry and serology of, A., III, 618.

Sce also Bacteria.

Bacillus acidophilus, A., III, 561.

Bacillus aerogenes cloacæ in fæces, A., III,

Bacillus alkaligenes, bacteræmia from, complicating diabetes, A., III, 297.

Bacillus cereus, electron microscopy of, and tyrothricin action on growth, A., III, 844.

Bacillus coli, action of phenol on, A., III, 505. bacteriolysin from, A., III, 696.

infections by, treatment of, with carbarsone, A., III, 2ŏ́9.

Bacillus funduliformis, chromatin structures in,

A., III, 146.
Bacillus lactis aerogenes, adaptation of, to medium, A., III, 221.

growth of, effect on, of m-cresol and of resorcinel, A., III, 222.

of sulphonamides, A., III, 222. morphology of, A., III, 371.

Bacillus larvæ. nitrite-nitrogen test for, A., III,

Bacillus lepræ, culture of, in thiamin medium, A., III, 563. Bacillus morganii, bacteriostatic activity of

sulphonamides on, A., III, 843. Bacillus paradysenteria Y6R, effect on, of

X- and ultra-violet rays, A., III, 687. Bacillus proteus vulgaris, growth factors for, A., III, 615.

Bacillus subtilis, gas metabolism of, effect on, of sodium azide, A., III, 694.

Bacillus tuberculosis, BCG strain, effect of phytoneides on, A., III, 302.

Bacillus turcosum, acetic acid decomposition by, A., III, 695.

Bacillus typhosus, antigen from, A., III, 302. growth of, inhibited on bismuth sulphite agar, A., III, 302.

Bacteria, acetic, formation by, of reducing sugar-carboxylic acids, A., III, 435.

acetone-butyl alcohol, flavin formation by, A., III, 296.

aerobic, cellulose-decomposing, A., III, 296. mesophilic, effect of heat on spore germination in, A., III, 370. spore-forming, antigenic properties of, A.,

III, 778.

air-borne, effect on, of triethylene glycol vapour, A., III, 71.

amaerobic, chromogenic, spore-forming, enrichment and purification of, A., III, 370. dried beef heart medium for, A., III, 73.

in oysters, A., III, 697. pathogenic, dehydrogenation by, A., III,

697. antibiosis between fungi and, A., III, 291.

autolysis of, A., III, 697.

brown and purple, non-sulphur, A., III, 770. butyric, from olives, A., III, 222.

cation adsorption by, A., III, 770.

cells and cytolysates of electron microscopy of, A., III, 72.

collection of, from air and textiles, A., III, control of, by glycol vapours, A., III, 557.

counting of, instruments for, A., III, 843. culture media for, A., III, 144.

cultures of, drug-resistant, A., III, 434. tube, preservation of, with liquid paraffin, A., III, 843.

with peptones, A., III, 616.

death of, due to enzyme inactivation, A., III, 144.

logarithmic order of, A., III, 505.

decomposition by, of vitamin-C, A., III, 146. disinfection of, by water-soluble bactericides, A., III, 221.

effect on, of colchicine, A., III, 295. of high-frequency waves, A., III, 837. of nitrates and nitrites, A., III, 616. of propamidine, A., III, 506.

of ultra-violet rays, and their toxins, A.,

III, 557. enzyme formation polysaccharide and

synthesis by, A., III, 696. enzymic activities of, A., III, 72.

fat hydrolysis bv, measured with basic dyes, A., III, 434.

Gram-negative, endotoxins of, effect of sulphonamides on, A., III, 506. immunisation against, A., III, 567. induction of hæmorrhage in mice by, A.,

III, 508. green-fluorescent, pigment-producing, A., III,

Bacteria, growth of, inhibited by glucose, A., III, 75. restriction of, in soil counts, A., III, 770. infections by, chemotherapy of, A., II, 279.

intestinal, allantoin decomposition of, A., III,

lactic, riboflavin requirements of, A., III, 844.

luminous, nutrition of, A., III, 145. metabolism of, in iron deficiency, A., III, 771. morphology of, by electron microscope, A., III, 75.

mutation of, effect of X-rays on, A., III, 844. nicotine-destroying, A., III, 371. nodule, A., III, 145.

organic acid degradation by, A., III, 695. photosynthetic, oxidation of alcohols by, A., III, 695.

plant-pathogenic, effect on, of antibiotics, A., III, 435.

populations of, in fish muscle, A., III, 145. preservation of, A., III, 145.

proteases of, A., III, 66.

radiation damage to, effect of cold on, A., III,

radioactive, distribution of, injected into rats, A., III, 435.

reduction by, of tetrazolium salts, A., III, 515.

soil. Sec under Soils.

strains of, nutrition of, A., III, 295. sulphonamide inhibitor formed sulphonamide agar, A., III, 560. by,

surface, effects of ammoniated mercury, soap and water, and sulphathiazole on, in newborn infants, A., III, 132.

synthesis by, of vitamin-B, A., III, 296. virus-sensitive, mutation of, to virus-resistant bacteria, A., III, 437.

See also Bacilli.

Bactericides, acridine compounds, A., III, 493. ammonium derivatives, A., III, 133.

canavalin, A., III, 844. carbarsone, A., III, 209. crystal-violet, A., III, 560.

di(hydroxyphenyl)alkanes, A., III, 560.

4:6-dimethoxytoluquinone, A., III, 831. gramieidin, A., III, 131.

homosulphonamides, A., III, 606.

mercurial, A., III, 221.

ammoniated, A., III, 132.
neosalvarsan, A., III, 492.
nicotinic acid, A., III, 358.
cstrogens, A., III, 370.
penicillin, A., III, 131, 207, 358, 427, 550, 756, 827, 829.

phenol, A., III, 505.

phenylmercuric benzoate, A., III, 221.

propamidine, A., III, 506.

propylene glycol, A., III, 133. pyridoxine, A., III, 358.

quinine, A., III, 679. quinones, A., III, 209.

serum, A., III, 493, 757. staphylococcus antitoxin, A., III, 204.

stilbenes, A., III, 144.

succinylsulphathiazole, A., III, 207.

sulphacetamide, A., III, 679. sulphaguanidine, A., III, 207, 358, 757, 829.

sulphamethazine, A., III, 828. sulphanilamide, A., III, 295, 206, 615, 829. sulphapyrazine, A., III, 205, 358.

sulphapyridine, A., III, 205, 358, 828.

sulphapyrimidine, A., III, 204, 205, 206, 358,

493, 679, 757, 828, 829. sulphathiazole, A., III, 132, 204, 205, 206, 207, 358, 679, 828, 829.

sulphonamides, A., III, 205, 206, 358, 427, 492, 493, 505, 506, 551, 607, 680, 757, 828.

thiamin, A., III, 358. thiobismol, A., III, 209. tyrothricin, A., III, 829. water-soluble, disinfection of bacteria by, A., III, 221.

zinc peroxide, A., III, 829.

Bacteriophage, adsorbed, purification of, A., III,

determination of, source of error in, A., III, 701; C., 186.

Bacteriophage, dosage of, capillary tubes for, A., III, 224.

multiplication of, A., III, 374. and its protective effect on Shigella dysenteriæ infection, A., III, 150. purification of, by cataphoresis, A., III, 302.

Bacteriostatics, formation of, by fungi, A., III,

Bacteriostatic action, effect of temperature on, A., III, 144.

Bacterium aliphaticum, carbohydrate utilisation by, A., III, 696.

Bacterium alkalescens, intestinal and urinary infections from, A., III, 148.

Bacterium choleræ-suis, infection with, in man, A., III, 78.

Bacterium shigæ, agglutinability of, A., III, extracts, immunisation with, in mice, A., III,

149.

Bacterium tularense, effect on, of p-aminobenzoic acid and sulphonamides, A., JII, 843.

Bacterium typhi-murium, food poisoning due to, A., III, 700.

human carrier of, treated by cholecystectomy, A., III, 700.

Baicalein, A., III, 232.

Bajri, germinating, enzymes of, A., III, 612. Bakery products, analysis of, C., 30.

Balances, microchemical, errors in, C., 208. quartz torsion, C., 144.

Bananas, ethylene-treated, consumption of ethylene by, A., III, 314.

hemicellulose metabolism in, during ripening and storage, A., III, 379.

Baralyme, as carbon dioxide absorbent, A., III,

Barbiturates, anæsthesia with. See under Anæsthesia.

containing the 42-cyclopentenyl group, A., II, 144.

determination of, C., 86.

effect of, on choline-esterase in tissues, A., III,

failure of, to prevent cyclopropane-adrenaline tachycardia, in dogs, A., III, 833. poisoning by. See under Poisoning.

recovery after 8 grams of, A., III, 211. treatment with, of hysteria, A., III, 683.

Barbituric acid, derivatives, iso- and polymorphism of, A., I, 168. mono- and di-substituted, separation of,

C., 23. salts, C., 36.

determination of, in urine, C., 36.

sodium ethyl-sec.-butyl ester. See Butisol sodium.

Barbituric acids, reaction of, with phosphorus pentasulphide, A., II, 203.

substituted, hydrolysis of, under pressure, A., II, 58.

Barium, nuclear scattering cross-section for, A., I. 263.

Barium compounds, biochemistry of, A., III, 261.

distribution of, in small intestine, vagal and sympathetic innervation in, A., III, 657. poisoning by. See under Poisoning.

with magnesium, crystal structure of, A., I, 194.

Barium beryllate, A., I, 290.

bromate, equilibrium of, with barium chlorate and water, A., I, 225; C., 194. bromide, solubility of, in water, A., I, 35.

chlorate, equilibrium of, with barium bromate and water, A., I, 225; C., 194.

chloride, decarburising action of, on steel, C., 65.

electrical conductivity of, in aqueous-alcoholic solution, A., I, 18.

equilibrium of, with dioxan and water, A., I, 86.

iodate, solubility of, in aqueous ammonia, A., I, 127.

permanganate, reaction of, with hydrogen sulphide, A., I, 232.

nitrate, heat content of, A., I, 219. heat of formation of, A., I, 226.

Barium oxide, equilibrium of, with bismuth sesquioxide, A., I, 37.

sulphate, determination of, gravimetrically, C., 195.

in lead accumulator plates, C., 59. precipitated, stable bound water in, C., 6. precipitation of, turbidity produced in, A.,

solubility of, in aqueous-alcoholic solution, A., I, 18.

Barium organic compounds :--Barium platinocyanide, luminescence of, A.,

Barium detection and determination :-

detection of, C., 6.

determination of, C., 5. photometrically, C., 155.

Barkhausen effect, effect of torsional vibrations on, A., I, 101.

Barley, α - and β -amylases of, A., III, 232.

extract value of, determination of, C., 178. germination of, starch-liquefying power during, A., 111, 441.

X-ray-treated, effect of seed treatments on,

A., III, 380. See also Hordeum sativum.

Barley plants, absorption by, of rubidium bromide, A., III, 228.

constituents of, effect of saline substrate on, A., III, 229.

Golden, mutations of, induced by X-rays, A., III, 85.

roots, excised, organic acid metabolism in, A., III, 780, 853.

seedling, etiolated, respiration of, A., III, 854. germination, growth, and respiration of, A., III, 513.

growth of, in relation to germination environment, A., III, 154.

potassium and sodium nutrition in relation to, A., III, 440.

starch content of, A., III, 88. Barley sap, oxidation by, of hexose diphosphate,

A., III, 624.

Barosma, species, pharmacognosy of, A., III,

Bartonella muris, anæmia from, A., III, 73. Barytes, birefringence of, A., I, 218.

in extreme red and near infra-red, A., I, 295. deposits of, with fluorspar, Thomson Hill, Nelson, A., I, 257. S. Durham, A., I, 70.

Base, C6H7N, and its salts, from rye-grass, A., II, 113.

Bases, definition of, A., I, 126.

electrolysis of, current decrease during, A., I,

exchangeable, determination of, in soils, C., 89.

organic, surface tension of, and of their mixtures with phenols, A., I, 246. strengths of, in selenium oxychloride, A., I,

130.

See also Alkalis, Amines, etc.
Basergin, effect of, on uterus after parturition, A., III, 60.

Bat, brain of. See under Brain. See also Myotis lucifugus.

Batteries, storage, production of spectroscopic analysis in, C., 62. See also Accumulators.

Bauxite, analysis of, mineralogically, C., 61. Tasmanian, A., I, 47.

Bayer 7602, biological action of, compared with

I.C.I. synthetic product, A., III, 552.

Beans, castor. See Castor beans.
germinated, production of vitamins in, A., III, 751.

navy, oil extracted from, effect of, on starch digestion, A., III, 840.

polyploidy in, induced by naphthylacetic acid, A., III, 380.

snap, ascorbic acid in, A., III, 567. yam. See Pachyerhizus erosus.

See also Phaseolus vulgaris. Bean plants, carbohydrates in, treated with indolyl-3-acetic acid, A., III, 314.

192 Bean plants, decapitated and intact, leaves, effect of green and red light on, A., III, 442. effect on, of indolylacetic acid, A., III, 86. of platinic chloride, A., III, 781. of tetrahydrofurfuryl butyrate, A., III, 87. growth and nutrition of, effect of light on, A., III, 780. leaves, starch hydrolysis in, after spraying with growth substances, A., III, 86. Beavers, scent glands of, musk from, A., II, 176. Bed-clothes, hospital, dust-laving oils applied to, A., III, 686. Beech. See Fagus silvatica. Beech wood, sulphite liquor from, A., II, 115. Beef. determination in, of thiamin, C., 183. Beef extracts, leucylpeptidase from, A., III, 767. Beer, analysis of, by formol titration, C., 178. determination in, of acidity, C., 32. oxidation-reduction in, determination of, C., turbidity measurement in, C., 179. Bees, feeding of, with soya-bean flour, A., III, 670. honey-, effect on, of light, A., III, 261. foraging behaviour of, A., III, 261. worker, vitamin content of, during life, A., III, 198. royal jelly of, as source of vitamins, A., III, 354.vitamin- B_1 content of, A., III, 673. Bee bread, as source of vitamins, A., III, 354. vitamin content of, A., III, 353. vitamin- B_1 content of, A., III, 673. Beetles, brassy willow. See Phyllodecta vitellina. giant, polymorphism in, A., III, 818. See also Ptinus tectus, and Rhizopertha dominica. Beetroots, sugar, asexual propagation of, A., III, carbohydrate translocation in, A., III, 311. constituents of, during development, A., III, 440. normal and tumour tissues of, A., III, 442. determination in, of sugar, juice volume in, C., 128. feeding of, to laying pullets, A., III, 265. growth of, Gotland, and solar radiation, A., III, 705. inhibition in normal and tumour tissues of, A., III, 87. silicon deficiency in, A., III, 379. Behnin, and its tetrabromide, A., II, 284. Belladonna, extracts, analysis of, C., 36. Belmacamda, constituents of, A., II, 271. Belmacamdin, constitution of, A., II, 271. Belmacamgenia, constitution of, A., II, 271. Bentonite, electrochemistry of, A., I, 60. gelation of, pH in, A., I, 84. hydrogen, electrochemical and viscous properties of, A., I, 59. identification of types of, A., I, 59. infra-red transmission through, A., I, 223. suspensions, viscosity of, A., I, 60. ms-Benzacridan, derivatives of, A., II, 60. Benzaldazine, 4:4'-dicyano-, A., II, 16. Benzaldazines, o-hydroxv-, structure of, A., II, 371. Benzaldehyde, application to, of Tiemann-Reimer reaction, A., II, 135. Cannizzaro reaction with furfuraldehyde and, A., II, 375. condensation of, with acetone and methyl ethyl ketone, A., I, 42. oxidation of, by potassium permanganate, A., I, 41. Benzaldehyde, p-amino-, preparation of, A., II, 101. 4-chloro-3:5-dinitro-, condensation of, with malonic acid, in presence of organic bases, A., II, 335. p-hydroxy-, alkyl ethers of, A., II, 14. 3:5-dihydroxy-, diacetate of, A., II, 192. Benzaldehyde-4-β-d-glucoside, 2:4-dihydroxy-, A., II, 252. Benzaldoxime, p-nitro-, β-butyl, ethyl, and a-propyl ethers of, A., II, 89. Benz-p-aminoanilide, preparation of, A., II,

Benzanilide, N-nitroso-m-bromo-, A., II, 120. 1:2-Benzanthracene, fluorescence of, A., I, 3. metabolism of. See under Metabolism. spectrum of, absorption, A., I, 164. 2:3-Benzanthraquinone, 1-chloroand 1:4-dichloro-, naphthotriazolequinonyl derivatives of, A., II, 61. Benzaurins, coloured, isomerism of, A., II, 264. Benz[ij]carbazolo[1:9:8-cdef]quinolizine-7:11dione, and its oxime, A., II, 58. 2:3-Benzeœramidonine, A., II, 60. 5:6-Benzcoumaran-1-one, 4-hydroxy-, A., II, 346. Benzcyanomethylamide-p-arsonic acid, A., II, mesoBenzdianthrene, A., II, 300. 4:5-Benz-1:2-diphenylaceperylene-Bz1-Bz2dicarboxylic anhydride, A., II, 95. Benzedrine, action of, in control of obesity, A., III, 429. on metabolic processes in central nervous system, A., III, 212. on nervous system, A., III, 429. electrical activity of, A., I, 40. sulphate, dermatitis due to, A., III, 760. poisoning by. See under Poisoning. d-Benzedrine sulphate, dermatitis due to, A., III, 760. Benzedrines, isomeric, physical constants of, A., II. 131. Benzene, action on, of ultra-violet light, A., II, 93. conversion of, into phenylmercapturic acid in rats, A., III, 276. determination of, in coke-oven gases, C., 115. in gases, by active carbon, C., 68. in presence of cyclohexane, C., 21. equilibrium of, with acctone and water, A., I, with dioxan and water, A., I, 154. ethylation of, A., II, 155. methylation of, A., II, 41. molecules, diameter of, A., I, 166. nitration of, photochemical, A., I, 109. poisoning by. See under Poisoning. preparation of, by Kolbe's synthesis, A., II, reaction of, with butadiene, in presence of sulphuric acid and hydrogen fluoride catalysts, A., II, 293. solid, cohesion of, at m.p., A., I, 7. mol. wt. of, from cohesion, A., I, 7. spectrum of, Rayleigh line in, A., I, 78. substitute for, in determination of acid numbers, C., 74. volume of, mixed with carbon tetrachloride, A., I, 39. Benzene, 4-bromo-3-iodo-1-nitro-, A., II, 156. chloro-, sulphonation of, by sulphur trioxide, A., I, 286. o-dichloro-, spectrum of, absorption, A., I, 52. 1:2:4:5-tetrachloro-, derivatives of, A., II, 42. 2-chloro-1-iodo-4:5- and -4:6-dinitro-, A., II, 1-chloro-2:4-dinitro-, determination of, in 2:4-dinitroanisole, colorimetrically, C., 118. in dichloronitro-derivatives, inhibition resonance in, A., I, 238. 3:5-dichloro-1-nitro-2:6-diamino-, 2:6-diacetyl derivative, A., II, 43. 3:5-dichloro-1-nitro-2:4:6-triamino-, A., II, 43. 2:3:5:6-tetrachloro-1-nitro-, amination of, A., II. 42. hexahydroxy-, and its derivatives, A., II, 45. nitro-, cryoscopy in, A., I, 281. determination of, in aniline, polaro-graphically, C., 70. nitration of, photochemical, A., I, 109. spectrum of, Hertzian, A., I, 266. m-dinitro-, equilibrium of, with tin tetrachloride, A., II, 253.

pyrene, A., I, 268.

ketones, A., II, 16.

iso- and poly-morphism of, A., I, 100.

Benzene, nitrodihydroxy-, derivatives, polarography of, A., I, 129. p-Benzeneazobenzoic acid, p'-iodo-, and its derivatives, A., II, 6. a-Benzeneazo-β-ketobutyrolactone, a-p-nitro-, A., II, 332. 4-Benzeneazo-3-keto-2-δ-cyano-nbutylthiophan-4-carboxylic acid, 4-p-nitro-. ethyl ester, A., II, 305. 4-Benzeneazo-3-ketothiophan-4-carboxylic acid, 4-p-nitro-, ethyl ester, A., II, 168. 4-Benzeneazo-3-ketothiophan-4-carboxylic acid-2-B-propionic acid, 4-p-nitro-, diethyl ester, A., II, 169. Benzeneazomalononitrile, p-chloro-, and p-nitro-, A., II, 350. 5-Benzeneazo-2-methyl-7-allylbenzthiazole, 6-hydroxy-5-p-nitro-, A., II, 205. 7-Benzeneazo-2-methyl-5-allylbenzthiazole, 6-hydroxy-7-p-nitro-, A., II, 205. 5-Benzeneazo-2-methylpyrimidine, 4:6-diamino-, 4:5:6-triamino-, and 4:6-diamino-5-p-chloro-, and -5-p-nitro-, A., II, 350. 5-Benzeneazo-4-methylpyrimidine, 2:6-dihydroxy-5-p-chloro-, A., II, 350. 4-Benzeneazonaphthalene, 1-p-fluoroamino-, benzoyl derivative, A., II, 15. 1-Benzeneazonaphthylarsonic acid, 4-hydroxy-, A., II, 243. 4-Benzeneazophenols, 3-halogeno-, chromoisomerism of, resonance theory for, A., II, 2-Benzeneazophenylarsonic 5-hydroxy-, acid. A., II, 243. 3-Benzeneazophenylarsonic acid. 4-hydroxy-, A., II, 243. 5-Benzeneazophenylarsonic acid, 2-hydroxy-, A., II, 243. p-Benzeneazophenylarsonic acid, p-3'-amino-4'hydroxy-, A., II, 243. p'-Benzeneazophenylarsonic acid, p-3'-amino-4'hydroxy-, p-3'-acetyl derivative, A., II, 243. 5-Benzeneazo-2-phenyl-4-methyl-2:1:3-triazole 3-oxide, A., II, 237. 5-Benzeneazopyrimidine, 4:6-diamino-5-p-chloroand -5-p-nitro-, A., II, 350.
Benzenediazo-N-bromocarboxylamide, p-nitro-, hydrobromide of, A., II, 332. Benzenediazosulphonic acids, anti- and synpotassium salts, structure of, A., II, 12. Benzenesulphinic acid, thallium salt, A., II, 66. Benzenesulphon-p-acetamidoanilide, 4-chloro-3-nitro-, A., II, 313.
3-nitro-4-amino-, A., II, 313. Benzenesulphonamide, spectrum of, absorption, ultra-violet, A., I, 96. Benzenesulphonamide, 3:4-diamino-, A., II, 313. p-cyano-, imino-ethyl ether of, A., II, 370. p-hydroxylamino-, acetyl derivatives, and p-nitroso-, A., II, 256. complex formation and rearrangement of, A., II, 74. 5-Benzenesulphonamidobenzfurano-2':1'-5:6quinoline, A., II, 173. Benzenesulphonamidobenzoic acid, p-iodo-, A., II. 11. 2-Benzenesulphonamidodibenzfuran, A., II, 173. 2-Benzenesulphonamidodibenzfuran, 3-amino-, and 3-nitro-, A., II, 173. Benzenesulphonamido-4:6-dimethylpyrimidine, 2-p-amino. See Sulphamezathine. 8-y-Benzenesulphonamidopropylamino-6methoxyquinoline, 8-γ-p-amino-, 8-γ-p-acetyl derivative, A., II, 56. 5-Benzenesulphonamidothiazole, 5-p-amino-, A., II, 173. 5-Benzenesulphonamidothiazole-2-amide, 5-p-amino-, acetyl derivative, A., II, 173. 5-Benzenesulphonamidothiazole-2-nitrile, 5-p-nitro-, A., II, 173. 5-Benzenesulphonamidothiazole-2-thioamide, reaction of, with alcohols and potassium oyanide, A., II, 134. 5-p-amino-, acetyl derivative, and 5-p-nitro-, A., II, 173. Benzenesulphon-p-chloroanilide, nitro-, A., II, 313. s-trinitro, compounds of, with coronene and 4-chloro-3-Benzenesulphon-o-hydroxyanilide, 4-chloro-3molecular compounds of, with unsaturated nitro-, A., II, 313. 3-nitro-4-amino-, A., II, 313.

193 INDEX OF SUBJECTS.

- Benzenesulphon-\beta-hydroxyethylamide, 4-chloro-3-nitro-, A., II, 313.
- Benzenesulphon-2'-hydroxy-4'-methylanilide, 4-chloro-3-nitro-, A., II, 313.
- Benzenesulphonic acid, o-aminophenyl ester, A., II, 97.
- 3-bromo-5-aminop-tolyl ester, A., II, 97. 6-bromo-4-amino-m-tolyl ester, A., II, 97. 4-bromo-2-nitrophenyl ester, A., II, 97. 3-bromo-5-nitro-p-tolyl ester, A., II, 97. 6-bromo-4-nitro-m-tolyl ester, A., II, 97.
- 4:6-di bromo-2-nitrophenyl ester, A., II, 97. 2:6-dibromo-4-nitro-m-tolyl ester, A., II, 97. 4-nitro-m-tolyl ester, A., II, 97.
- Benzenesulphonic acid, m-amino-, o-aminophenyl ester, A., II, 97.
 - p-bromo-, o-aminophenyl ester, A., II, 97. 3-bromo-5-amino-p-tolyl ester, A., II, 97. 4-bromo-2-nitrophenyl ester, A., II, 97. 4:6-dibromo-2-aminophenyl ester, A., II, 97.
 - 4:6-dibromo-2-nitrophenyl ester, A., II, 97.
 - 3-bromo-5-nitro-p-tolyl ester, A., II, 97. 6-bromo-4-nitro-m-tolyl ester, A., II, 97. o-nitrophenyl ester, A., II, 97
 - 4-nitro-m-tolyl ester, A., II, 97. 4:6-dibromo-2-nitrophenyl ester,
- m-nitro-, 4:6-A., II, 97. 3-bromo-5-nitro-p-tolyl ester, A., II, 97.
- o-nitrophenyl ester, A., II, 97. 2-Benzencsulphonimido-3-β-acetoxythiazolone,
- 2-p-amino-, A., II, 279. 2-Benzenesulphonimido-3-isoamylthiazolone,
- 2-p-amino-, A., II, 279. 2-Benzenesulphonimido-3-n-butylthiazolone, 2-p-amino-, A., II, 279.
- 2-Benzenesulphonimido-3-carboxymethylthiazolone, 2-p-amino-, A., II, 279.
- 2-Benzenesulphonimido-3-β-ethoxyethylthiazolone, 2-p-amino-, A., II, 279. 2-Benzenesulphonimido-3-ethylthiazolone,
- 2-p-amino-, A., II, 279.
- 2-Benzenesulphonimido-3-n-hexylthiazolone,
- 2-p-amino-, A., II, 270.
 2-Benzenesulphonimido-3-β-hydroxyethylthiazolone, 2-p-amino-, A., II, 279.
 2-Benzenesulphonimido-3-methylthiazolone, 11, 279.
- 2-p-amino-, A., II, 279. Benzenesulphonmorpholinomethylimide, A., II,
- Benzenesulphonxanthylamide, A., II, 156. and p-amino-, A., II, 156.
- a-Benzenesniphonylbenzyl methyl ketone, A., II, 338.
- ${\bf Benzene sulphonyl benzyl} is othio carbamide,$ p-amino-, p-acetyl derivative, A., II, 365.
- Benzenesulphonylglycine, p-iodo-, and 3:4:5triiodo-, A., II, 11.
- 1-Benzenesulphonyl-2-phenyltetrahydroindazolone, 1-p-amino-, 1-p-acetyl derivative, A., II, 60.
- N-Benzenesulphonylsulphanilic 3:4:5triiodo-, A., II, 11.
- 2:3-Benzfluorene, 1-hydroxy-, and its derivatives, A., II, 128.
- 3:4-Benzfluorenones, A., II, 373.
- 3:4-Benzfluorenone-7-carboxylic acid, A., II, 373.
- 3:4-Benzfluorenone-8-carboxylic acid, A., II,
- Benzfurano-1':2'-5:6-quinoline, amino-, bromo-, and nitro-derivatives of, A., II, 173.
- Benzfurano-2':1'-5:6-quinoline, A., II, 173. Benzfurano-2':1'-5:6-quinoline, 5-amino-, II, 173.
- Benzfurano-2':1'-6:7-quinoline, amino-, nitro-derivatives of, A., II, 173.
- Benzfuranoquinolines, amino-, substituted derivatives of, A., II, 173.
- Benzcyclohexylamide, p-nitro-, A., II, 100. 5:6-Benzhydrind-1-one, A., II, 330.
- a-Benzhydrylamino-3:4-dibenzyloxy-nbutyrophenone hydrochloride, A., II, 295.
- Benzhydryldimethylamine, A., II, 190. 2-Benzhydrylindanone, A., II, 10. Benzhydrylmethylmalonic acid, A., II, 299.

Benzidinediazidocopper, A., I, 290.

- Benzilic acid, aminoalkyl and dialkylamino-
- alkyl esters, salts of, A., II, 46. Benziminazole, biological effects of, and their reversal by purines, A., II, 171. derivatives of, A., II, 276.
 - growth inhibition by, and its reversal by purines, A., III, 435.
- Benziminoazole, 4-amino-, and 4-nitro-, A., II,
- 5-amino-, A., II, 171.
- Benziminazole series, sulphonamides of, A., II, 313.
- Benziminazole-5-sulphon-p-acetamidoanilide, 2-thiol-, A., II, 313.
- Benziminazole-5-sulphonamide, A., II, 313. Benziminazole-5-sulphon-p-aminoanilide, 2-thiol-, A., II, 313.
- Benziminazole-5-sulphon-o-hydroxyanilide, 2-thiol-, A., II, 313.
- Benziminophenylthiocarbamides, substituted, intramolecular transformations of, A., II, 190. 4:5-Benzindene, and its picrate, A., II, 132.
- 4:5-Benzindene-2-carboxylic acid, A., II, 132. Benzmorpholide, p-nitro-, and 3:5-dinitro-, A.,
- II, 100. Benzcyclooctatetraenes, A., II, 126.
- 3:4-Benz-43-cyclooctenone, and its oximes, A.,
- Benzofuran, basic derivatives of, synthesis of, A., II, 272.
- Benzoic acid, tert.-butyI ester, reactions of, with magnesium phenyl bromide, A., II, 220. 2:6-dichloro-I-phenyl ester, A., II, 128.
- cholesteryl ester, bromination of, A., II, 228. cis- and trans-aβ-dimesitylvinyl esters, A., II, 333.
- dissociation constant of, in aqueous acetone and aqueous sucrose, A., I, 281.
- $\Delta\beta$ -n-heptinenyl ester, A., II, 29. ingestion of, reaction after, in case of liver damage, A., III, 475.
- 7-ketocholesteryl ester, A., II, 301. phenylmercuric ester, bactericidal value of,
- A., III, 221. spectrum of, absorption, ultra-violet, A., I,
- 96. substituted derivatives, effect of, on plant
- growth, A., III, 87. Benzoic acid, o-amino-. See Anthranilic acid.
 - p-amino-, adsorption of, A., III, 204. antibacterial action of analogues and derivatives of, A., II, 369; III, 830.
 - content of, in enzymes, A., III, 364. determination of, in presence of procaine, C., 42.
 - with Clostridium acetobutylicum, C., 192. detoxicating effect of, on drug actions, A., III, 212.
 - effect of, on m-amino-p-hydroxyphenylarsenoxide toxicity in mice, A., III,
 - on grey hair in man, A., III, 47.
 - on vitamin-K synthesis in rat intestines, A., III, 425.
 - with sulphanilamide, on gromicro-organisms, A., III, 506.
 - formation of, by staphylococci, A., III, 773.
 - 1-naphthyl ester, A., II, 243. oxidation of, by soil bacteria, A., III, 145.
 - rôle of, in growth and lactation of rats, A., III, 47.
 - spectrum of, absorption, ultra-violet, A., I, 96.
 - synthesis of, by bacteria, A., III, 72. See also Vitamin-H.
 - 2:4-diamino-, 2-acetyl derivative, A., II, 369. m-amino-p-hydroxy-, methyl ester, effect of, on m-amino-p-hydroxyphenylarsenoxide
 - toxicity in mice, A., III, 136. 5-bromo-2-hydroxy-, 2-acetyl methyl ester, A., II, 303. derivative, 2-acetyl
 - 2-bromo-6- and -4-nitro-5-amino-, and their 5-acetyl derivatives, and 2-bromo-4:6-dinitro-5-amino-, 5-acetyl derivative, A.,
 - o-chloro-, use of, as acidimetric and iodometric standard, C., 195.

Benzoic acid, 2-ehloro-4-nitro-5-amino-, and its 5-acetyl derivative, A., II, 260.

- 4-fluoro-3-amino-, n-butyl, methyl, and n-propyl esters, hydrochlorides, A., II, 134. 5-fluoro-2-amino- and -2-nitro-, esters, and
- their hydrochlorides, A., II, 336.
- 4-fluoro-3-nitro-, n-butyl, methyl, n-propyl esters, A., II, 134.
- m-hydroxy-, reaction of, with formaldehyde, A., II, 221. p-hydroxy-, p-o'-hydroxy- and p-3':4':5'-trihydroxybenzoyl derivatives, A., II, 101.
- o-, m., and p-hydroxy-, and their alkyl ethers, thermodynamic dissociation constants of,
 - A., I, 85. derivatives of, A., II, 101.
- 2:4-dthydroxy-, derivatives of, A., II, 101. p-hydroxylamino-, and its derivatives, A., II,
- p-nitro-, electrolytic reduction of, to p-aminobenzoic acid, A., II, 77.
- cyclohexyl ester, A., 11, 99.
- y-nitro-β-butyl ester, preparation of, and its catalytic reduction, A., II, 317.
- 3:5-dinitro-, cyclohexyl ester, A., II, 100. 2:4:6-trinitro-, decomposition of, in dioxanwater mixtures, A., I, 41.
- thallium salt, A., II, 66. 6-nitro-2-chloro-, derivatives of, A., II, 260.
- o-Benzoicsulphinide ferridehæmoglobin, A., III, 323.
- Benzoin, use of, as reagent for zinc, C., 6. Benzoin reaction, reversibility of, A., II, 339. Benzole, determination of, in coal gas, C., 68.
- Benzonaphthone. See Perinaphthindenone. Benzonitrile, 2:6-dihydroxy-, and 2-hydroxy-6-nitro-, alkyl ethers of, A., II, 135. Benzophenone, photochemical dehydrogenation
- by, A., II, 142.
- Benzophenone, 2:4'-dichloro-, effect of, on tuberculosis, A., III, 359.
- 3:5-dichloro-4-hydroxy-, A., II, 128. m-nitro-, dichloride, A., II, 253.
- Benzophenone-2-acetic acid, A., II, 10.
- Benzophenone-4-carboxyanilide, 3-nitro-, A., II, 224.
- 3:3'-dinitro-, A., II, 224.
 Benzophenone-4-carboxy-p-dimethylamino-anilide, 3-nitro- and 3:3'-dinitro-, A., II, 224.
- Benzophenone-4-carboxylic acid, 3-nitro-, methyl ester, A., II, 224. 3:3'-dinitro-, A., II, 224.
- Benzophenone-3:5:3':5'-tetracarboxylic
- 4:4'-dihydroxy-, and its acid magnesium salt, A., II, 160.
- Benzopurpurin 6B sols, effect of electric field on, A., I, 246.
- Benzopyrylium salts, A., II, 232.
- transformation products of, A., II, 110. Benzoquinone, photochemical dehydrogenation by, A., II, 142.
- synthesis of, A., II, 264.
 Benzoquinones, 2- and 3-halogeno-, and their
- 4-oximes, function of halogen in, A., II, 139. Benzoyl compounds, p-nitro-, chemotherapy
- with, A., II, 99. Benzoyl chloride, 5-fluoro-2-nitro-, A., II, 336. 3:5-dihydroxy-, diacetate of, A., II, 192.
- β -Benzoyl-a-(p-acetamidophenyl)propionitrile, A., II, 81.
- Benzoylacetic acid, Δγ-β-butenyl and crotyl esters, A., II, 33.
- 4-Benzoylacetyl-1-phenyl-1:2:3-triazole, A., II, 145.
- N^4 -Benzoyl- N^1 -acetylsulphanilamide, A., II, 256. N-Benzoylalanine, N-p-nitro-, A., II, 279.
- 1-Benzoyl-4-p-anisylmethylpiperazine chloride, A., II, 235.
- N-Benzoylarsanilic acid, N-p-cyano., A., II, 243.
 4-Benzoylbenzaldehyde, 2-nitro.4-m-nitro., and its derivatives, A., II, 224.
- -Benzoylbenzoic acid, amides, A., II, 307. condensation of, in sulphuric acid, A., I,
- determination of, and its derivatives, C.,
 - methylanilide, A., II, 307. normal and ψ -esters of, A., II, 298.

- 1-Benzoyl-3-benzoyloxy-5-phenylpyrazole, A., II, 58.
- 1-Benzoyl-5-benzoyloxy-3-phenylpyrazole, 11, 58.
- 1-Benzoyl-8-benzoyloxy-1:2:3:4-tetrahydroquinoline, A., II, 378.
- a-Benzoylbinret, a-p-amino-, and a-p-nitro-, A., 11, 242.
- 1-Benzoyl-4-bromomethylpiperidide, A., II, 170. Benzoylisocarbimide, p-nitro-, A., II, 242.
- 1-Benzoyl-4-p-chlorobenzylpiperazine chloride, A., II, 235. Benzoyl-NN'-dibenzylcarbamide, A., II, 107.
- N-Benzoyl-NN'-dibornylcarbamide, A., II, 106.
- Benzoyldiethylaminoethanol, p-amino-, and its derivatives, action of, on muscle chronaxie, A., III, 579.
- 1-Benzoyl-1:2-dihydroquinaldinonitrile, 1-o- and -m-nitro-, A., II, 315.
- N-Benzoyl-N-(or N'-)p-dimethylaminophenyl-N'- (or N-) 1-menthylcarbamide, and N-p-bromo-, A., II, 106.
- 2-Benzoyl-3:6-dimethylbenzoic acid, and methyl ester, n- and ψ -forms, A., II, 298. Benzoylisodurene, A., II, 298.
- 4:5-Benzoylenedinaphthylene dioxide, A., II,
- Benzoyl-1-glutamic acid, p-amino-, A., II, 369. a-Benzoylhexoic acid, amide, and ethyl ester, A., II, 359.
- N1-Benzoyl-N4-hexoylsulphanilamide, p-nitro-, A., II, 365.
- 9-Benzoyl-10-a-hydroxybenzhydrylphenanthrene, anil, and its derivatives, A., II,
- N-Benzoyl-N'- β -hydroxyethylcarbamide, N-p-amino-, and N-p-nitro-, and derivatives, A., II, 242.

 N-Benzoyl-N'-\(\beta\rangle\)-mitro-, A., II, 242.

 N-Benzoyl-N'-\(\beta\rangle\)-mitro-, A., II, 242. their
- 2-Benzoyl-2-methyl-1-hydrindone, A., II, 299.
- 1-Benzoyl-4-methylpiperidine, 1-m-nitro-, A., II, 241.
- 1-Benzoyl-4-methyl-2-piperidone, 1-m-nitro-, A., II, 241.
- dl-Benzoyl-4-methyl-2-piperidone, 3:3-dibromo-1-m-nitro-, A., II, 241.
- 8-Benzoyl-1-naphthoic acid, and its derivatives, normal and ψ -structures of, A., II, 224. ethyl ester, normal and ψ -forms, A., II, 225.
- Benzoylnaphthylene oxide, o-bromo-, A., II, 304.
- 5-Benzoylnaphthylene dioxide, A., II, 304.
- 3-Benzoylnorcamphane-2-carboxylic acid, A., II, 222.
- 3-Benzoylœstradiol-17-β-maltoside heptaacetate, A., II, 123.
- 1-Benzoyl-4-β-phenylethylpiperazine hydrochloride, A., II, 235.
- 4-Benzoyl-1-phenyl-5-methyl-1:2:3-triazole, and its 2:4-dinitrophenylhydrazone, A., II, 145.
- trans-2-Benzoyl-1-phenylcyclopentane, and its 2:4-dinitrophenylhydrazone, A., II, 225.
- 1-Benzoyl-2-phenyl-41-cyclopentene, 2.4-dinitrophenylhydrazone, A., II, 225.
- 1-Benzoyl-2-phenyl-42-cyclopentene, 2:4-dinitrophenylhydrazone, A., II, 225.
- 1-Benzoyl-4-phenylpiperazine hydrochloride, A., II, 235.
- y-p-Benzoylphenylpropane, and its 2:4-dinitrophenylhydrazone, A., II, 297.
- Benzoylphenylpropionic acid, and its methyl ester, and its 2:4-dinitrophenylhydrazone, A., II, 297.
- β-Benzoylphenylpropionitrile, A., II, 298.
- 2:4-dinitro- β -p-Benzoylphenylpropionitrile, phenylhydrazone, A., II, 297.
- 4-Benzoyl-1-phenyl-1:2:3-triazole, 2:4-dinitrophenylhydrazone, A., II, 145.
- β -1-Benzoyl-4-piperidylpropionic acid, A., II, 170. syntheses of, A., II, 169.
- 3-Benzoylpyridine, 3-3':4':5'-trihydroxy-, and its 3-3':4':5'-tribenzyl derivative, A., II, 378.
- 3-Benzoylquinoline-2-carboxylic acid. ester, A., II, 307.
- N¹-Benzoylsulphanilamide, and m-nitro-, A., II, 365.

- N4-Benzoylsulphanilamide, N4-o-fluoro-, A., II, 15. N4-p-nitro-, A., II, 100.
- N-Benzoyl-1:2:5:6-tetrahydropyridine. 3:4-diamino-, dibenzoyl derivative, A., II,
- 1-Benzoyl-1:2:3:4-tetrahydroquinoline, 8-hydroxy-, A., II, 378.
- 8-hydroxy-1-*p*-hydroxy-, A., II, 378. a-Benzoylthiol-α-phenylacetone, A., II, 372.
- N"-Benzoyl-NN'N"-triphenyl-N-ethylguanidine, A., II, 191.
 N"-Benzoyl-NN'N"-triphenyl-N-methyl-
- guanidine, A., II, 191.
- Benzoyl-l-tyrosylhistamine, A., II, 83. Benzoylvalylvaline, ethyl and p-phenylphenacyl
- esters, A., II, 324.
 Benzoyl-d(-)-valyl-d(-)-valine, ethyl ester, A., II, 324.
- Benzoyl-d(-)-valyl-l(+)-valine, p-phonyl-phenacyl ester, A., II, 324.
- Benz-β-phenylethylamide, o-nitro-, A., II, 309. Benzpinacol, action on, of potassium, in boiling
- ether, under nitrogen, A., II, 46; C., 22. Benzpiperidide, p-nitro-, and 3:5-dinitro-, A., II, 100.
- Benzpyrene, brain tumours induced by, A., III, 263.
- bronchial epithelium metaplasia after application of, to rats, A., III, 543. carcinogenic action of, A., III, 195.
- 3:4-Benzpyrene, determination of, fluorimetrically, C., 192.
 - fluorescence of, A., I, 3.
 - incorporation of, in media containing kephalin or lecithin in carcinogenesis, A., III, 746.
- Benzpyrones, action on, of Grignard reagents, A., II, 23.
- Benzpyrone series, A., II, 270.
- Benz(g)quinoline, 10-chloro-6-amino-, A., II, 276. 10-chloro-6-, -7-, and -9-nitro-, A., II, 275.
- Benzquinoline series, cyclisation in, A., II, 235. Benz(g)quinoline-5:10-dione, 6-nitro-. 1-Aza-anthraquinone, 6-nitro-.
- Benzthiazole, A., II, 205. derivatives, reactions of, A., II, 113.
- organo-metallic derivatives of, A., II, 352. Benzthiazole, 6-bromo-2-nitro-, and 6-chloro-
 - 2-nitro-, A., II, 146. 2-nitro-, A., II, 146.
 - 1-thiocyano-, A., II, 113.
 - thiol-, aluminium and magnesium salts, A., II,
- zinc salt, and its transformation during rubber vulcanisation, A., II, 279.
- Benzthiazoles, 2-amino-, oxidation of, A., II, 146.
- Benzthiazole series, sulphonamides of, A., II, 313.
- Benzthiazole-5-sulphon-p-acetamidoanilide, 2-thiol-, A., II, 314.
- Benzthiazole-5-sulphon-p-chloroanilide, 2-thiol-,
- A., II, 313. Benzthiazole-5-sulphon-o-hydroxyanilide,
- 2-thiol-, A., II, 314. Benzthiazole-5-sulphon-2'-hydroxy-4'-methyl-
- anilide, 2-thiol-, A., II, 314. Benzthiazolylacetic acid, A., II, 352.
- pp'-2-Benzthiazolylazobenzene, A., II, 174. Benzthiazolylmethyldimethylcarbinol, A., II, 352. Benzthiazyl-1-thioncarbamic acid, ethyl and
- methyl esters, A., II, 113. Benz-o-, -m-, and -p-toluidides, 2:4:6-trinitro-, and their acetyl derivatives, A., II, 371.
- Benztriazole series, sulphonamides of, A., II,
- 313. Benztriazole-5-sulphonamide, A., II, 313.
- Benztriazole-5-sulphonamide, 1-hydroxy-, A., II, 313.
- Benztriazole-5-sulphon-o-hydroxyanilide, 1-hydroxy-, A., II, 313.
- Benztriazole-5-sulphon-β-hydroxyethylamide, 1-hydroxy-, A., II, 313.
- 3:1'-Benztriazolylbenzanthrone, A., II, 61. Benzyl alcohol, spectrum of, Hertzian, A., I,
- Benzyl alcohol, 2:5-dihydroxy-, and its dimethyl ether, A., III, 290.

- Benzyl d-sec.-butyl ether, p-bromo-, p-cyano-, A., II, 218.
 - esters, hydrogenolysis of, and their determination, C., 119.
 - in contact with nickel catalysts, A., II, 220.
 - fluoride, A., II, 2.7. vinyl ether, A., II, 97.
 - O-and N-Benzyl linkings, strength of, effect on, of substitution, A., II, 45.
- 1-Benzyl- $4-\beta-p$ -acetamidobenzoyloxyethyl-piperazine dihydrochloride, A., II, 236.
- a-Benzylacetoacetic acid, ethyl ester, 2:4-dinitrophenylhydrazone, A., II, 234. a-Benzylacetoacetic acid, a-chloro-, ethyl ester
- A., II, 338. Benzylamine, reaction of, with alkali metals, A.,
- II, 216. 2-Benzylaminobenzenesulphonimido-1-p-
- 2-p-nitro-, nitrobenzyl-1:2-dihydropyridine, A., II, 26.
- 1-Benzyl-4-β-p-aminobenzoyloxyethylpiperazine trihydrochloride, A., II, 236.
- a-Benzylaminodiphenylacetic acid, A., II, 77. 8-y-Benzylaminopropylamino-6-methoxy-
- quinoline, and its salts, A., II, 57.
- α-Benzyl-γ-p-anisyl-n-butyric acid, A., II, 94. Benzyl benzenesulphonylmethyl ketone, A., II,
- Benzylbenzoic acid, salts, lethal action of, on scabies-producing mites, A., III, 556.
- 1-Benzyl- $\hat{4}$ - β -benzoyloxyethylpiperazine dihydrochloride, A., II, 236.
- N-p-Benzylbenzylethylenediamine, A., II, 366. N-Benzyl-N-n-butylcarbamide, A., II, 255.
- Benzylcarbamylsemicarbazide, and its semicarbazones, A., II, 365.
- 1-Benzyl-4- β -p-chlorobenzoyloxyethyl-piperazine dihydrochloride, A., II, 236.
- Benzyl chloromethyl ketone, A., II, 338.
- 4-Benzylcoumarin, 6-chloro-, and its 3-methyl derivative, A., II, 344.
- Benzyldeoxyanisoin, A., II, 129. Benzyldihydro-\psi-brucine, and its salts, A., II, 64. Benzyldihydro-N-methylsec.-ψ-brucine, and its
- salts, A., II, 64. 1-Benzyl-4-3':4'-dimethoxyphenaeylpiperazine
- dihydrochloride, A., II, 236. 4-Benzyl-3:6-dimethylcoumarin, A., II, 344. 4-Benzyl-3:8-dimethylcoumarin, 8-chloro-, A.,
- II, 344. Benzyldimethyl-n-dodecylammonium chloride,
- A., II, 35. Benzyldimethyl-n-hexadecylammoninm chloride, A., II, 35.
- Benzyldimethyl-n-octylammonium chloride, A., II, 35.
- 1-Benzyl-4-n-dodecylpiperazine, and dihydrochloride and dimethiodide, A., II,
- 236. 5-Benzyl-5-ethyl-2:4-dithiobarbitnric acid, A., II. 203.
- Benzylethylenediamine, N-p-amino-, N-p-chloro-, and N-p-cyano-, and N-p-nitro-, and their hydrochlorides, A., II, 366.
- 1-Benzyl-4-ethylpiperazine dihydrochloride, A., II, 236.
- 5-Benzyl-5-ethyl-2-thiobarbituric acid, A., II, 203.
- α-Benzylfructofuranoside, photolysis of, A., I, 132.
- b-Benzylfructopyranoside, photolysis of, A., I,
- α- and β-Benzylglucosides, photolysis of, A., I, 132. a-Benzylglutaric acid, a-cyano-, diethyl ester,
- S-Benzylhomocysteine hydantoin, A., II, 309.
- 1-Benzyl-4- β -hydroxyethylpiperazine chloride, A., II, 236. 1-Benzyl-4- β -hydroxy-3':4'-dihydroxyphenyl-
- ethylpiperazine dihydrochloride, A., II, 236. 1-Benzyl-4-3':4'-dihydroxyphenacylpiperazine
- dihydrochloride, A., II, 236. 1-Benzyl-4-3':4'-dihydroxyphenacylpiperazine, 1-p-chloro-, dihydrochloride, A., II, 236.
- Benzylidene-p-aminocinnamic acid, ethyl ester, p'-alkoxy-derivatives of, A., II, 14.

5-Benzylideneamınothiazole-2-nitrile, A., II, 173. 16-Benzylideneandrostan-3(b)-ol-17-one, and its acetate, A., II, 50.

Benzylideneaniline, pp'alkoxy-derivatives, A., II, 14.

Reformatsky reaction with, A., II, 99.

ay- and py-Benzylidene-D-arabitols, isomeric, and their esters, A., II, 1.

3:3'-Benzylidenebis-4-hydroxycoumarin, and its dimethyl ether, A., II, 166.

Benzylidenebis-1-morpholinium di-n-butyl dibromide, A., II, 313.

Benzylidenebis-1-morpholinium di-n-heptyl dibromide, A., II, 313. Benzylidenebis-1-morpholinium di-n-hexadecyl

dibromide, A., II, 313. Benzylidenebis-1-morpholinium di-n-octvl

dibromide, A., II, 313. Benzylidenebis-1-morpholinium di-n-tetradecyl

dibromide, A., II, 313. Benzylidene-NN'-bis-4'-nitro-o-toluamide,

o-nitro-, A., II, 221.

Benzylidenebis-1-piperidinium dibromide, A., II, 309. di-n-heptyl Benzylidenebis-1-piperidinium di-n-octadecyl

dibromide, A., II, 309. Benzylidenebis-1-piperidinium di-n-octyl

dibromide, A., II, 309.

Benzylidenebis-1-piperidinium di-n-tetradecyl dibromide, A., II, 309. Benzylidene-\(\psi\)-brucine, hydrobromide, A., II, 64.

Benzylidenecamphorylsemicarbazone, A., II, 232. Benzylidenecamphorylsemicarbazone, m-nitro-, A., II, 232.

δζ-Benzylidene-a-deoxymannitol, and its oxalate, A., II, 359.

δζ-Benzylidene-α-deoxy-D-mannitol, a-nitro-, A., II, 359.

Benzylidenedeoxyvomicine, A., II, 240.

4:6-Benzylidenegluconitrile, 2:3:5-triacetate, A.,

Benzylideneglucosaccharic acid, diethyl ester, A., II, 121.

4:6-Benzylideneglucose, oxime, A., II, 359.

3:5-Benzylideneguanosine, and its 2-acetate, A., II, 112.

Benzylidene-N-methylsec.-\(\psi\)-brucine, A., II, 64. yo-Benzylidene-βε-methylene-D-mannitol αζ-dibenzoate, A., II, 119.

4:6-Benzylidene- α - and $-\beta$ -methyl-d-glucosides, 2:3-dicarbanilates of, A., II, 326.

Benzylidenephenetidine, p'-alkoxy-derivatives, A., II, 14.

21-Benzylideneallopregnan-3(β)-ol-20-one acetate, isomeride of, A., II, 267. 3:5-Benzylidene-1:2-1sopropylidenegluco-

furanose, 6-fluoride, A., II, 186. Benzylidenesulphanilamide, m-hydroxy-,

o-nitro-, A., II, 26. Benzylidenesulphathiazole, o- and m-nitro-, A., II, 26.

Benzylidene-p-toluidine, o'-amino-, o'-acetyl derivative, A., II, 308.

Benzyl mesityl ketone, p-bromo-, and m- and p-nitro-, A., II, 310.

Benzyl 3-methoxyphenyl ketone, 4-nitro-. 2:4-dinitrophenylhydrazone, A., II, 296.

Benzylmethylamine, p-amino-, A., II, 46. δ-Benzylmethylamino-α-benzylvaleric acid,

a-cyano-, ethyl ester, A., II, 273. y-Benzylmethylamino-a-phenylbutyric acid,

a-cyano-, ethyl ester, A., II, 273. γ-Benzylmethylamino-a-phenylbutyronitrile, and

its reineckate, A., II, 273. δ -Benzylmethylamino- α -phenylvaleric

a-cyano-, ethyl ester, A., II, 273. 9-Benzyl-10-methylanthracene, A., II, 255.

Benzyl-N-methylsec.-\psi-brucine, and its salts, A., II, 64.

N-Benzyl-N-methylcarbamide, A., II, 255. Benzylmethyl-y-chloropropylamine, A., II, 273. 4-Benzyl-6-methylcoumarin, A., II, 344.

4-Benzyl-6-methylcoumarin, 8-chloro-, A., II,

Benzylmethyldialkylammonium chlorides, A., II, 95.

Benzylmethyldibutylammonium chloride, A., II,

Benzylmethyldicetylammonium chloride, A., II,

Benzylmethyldidodecylammonium chloride, A.,

Benzylmethyldihexylammonium chloride, A., II, 95.

Benzyl methyl a-diketone, lactolide of, A., II, 339. Benzylmethyldioctylammonium chloride, A., II,

5-Benzyl-12-methyl-1:2:3:4:12:13-hexahydro-

xanthen, 5-o-hydroxy-, A., II, 22. enzyl methyl ketone hydrazone, A., II, 338. 2:4-dinitrophenylketone, Benzyl

Benzyl methyl ketone, a-hydroxy-, dimethyl acctal, A., II, 338.

1-Benzyl-4-methylpiperazine dihydrochloride, A., II, 236.

3-Benzyl-1-methylpiperidine-3-carboxylic acid, ethyl ester, A., II, 273.

3-Benzyl-1-methyl-1:2:3:4-tetrahydroisoquinoline, 6:7:3':4'-tetrahydroxy-, tetra-acetate, A., II, 203.

Benzyl-4-methylthiazolium chloride, 3-o-amino-, and its hydrochloride, and 3-o-nitro-, A., II, 313.

4-Benzylmorpholine-4':1-spiropiperazinium 1-chloride-4-hydrochloride, A., II, 236.

N-Benzyl-N'-morphollnomethylcarbamide, II, 239.

2-Benzylnaphthalene, 2:4'-hydroxy-, and its picrate, A., II, 94.

2-Benzylnaphthalenes, syntheses of, A., II, 93. 1-Benzyl-4- β -p-nitrobenzoyloxyethylpiperazine dihydrochloride, A., II, 236.

2-Benzyloxybenzaldehyde, azlactone of, A., II, 272.

2-Benzyloxybenzoic acid, 3:5-dichloro-, and its methyl ester, A., II, 100.

5-nitro-, and its ethyl ester, A., II, 100. 4-Benzyloxybenzoic acid, benzyl ester, A., II,

o-, m-, p-o'-, and p-p'-Benzyloxybenzoyloxybenzoic acids, benzyl esters, A., II, 101.

4-o-Benzyloxybenzoyloxy-3-phenylcoumarin, A., II, 345.

8-p-Benzyloxybenzoyloxyquinoline, A., II, 378. 2-p-Benzyloxybenzoylpyridine, A., II, 378.

p'-Benzyloxybenzylidene-p-methoxybenzylamine, A., II, 46.

Benzyloxybutanal, and its p-nitro and 2:4-dinitro-phenylhydrazones, A., II, 151. y-Benzyloxybutanal, y-Benzyloxybutyric acid, silver salt, A., II, 151.

 ϵ -Benzyloxypentane- $\alpha\beta$ -diol, A., II, 151.

2-Benzyloxyphenylpyruvic acid, and its acetonitrile, A., II, 272.

ε-Benzyloxy-aβ-isopropylidenedioxypentane, A., II, 151.

9-Benzylphenanthrene, 9-3':5'-dichloro-2'hydroxy-, and its acetate, A., II, 100.

o-Benzylphenones. See o-Benzylphenyl ketones. o-Benzylphenyl ketones, cyclisation of, A., II, 10.

1-Benzylpiperazine, dihydrochloride, A., II, 235. 1-Benzylpiperazine, 1-p-chloro-, dihydrochloride, A., II, 235.

4-Benzylpiperazine-1-carboxylamide chloride, A., II, 236.

4-Benzylpiperazine-1-carboxylamide, 4-p-chloro-, hydrochloride, A., II, 236.

4-Benzylpiperazine-1-carboxyanilide, 4-p-chloro-, hydrochloride, A., II, 236.

5-Benzyl-2-piperazine-5-carboxylic acid, and its ethyl ester, A., II, 169.

N-Benzyl-N-p-isopropylbenzylethylenediamine hydrochloride, A., II, 366.

Benzylsulphamic acid, sodium salt, A., II, 158. Benzylsulphinyl cyanide, A., II, 76.

Benzylthiazolium salts, o-amino-, A., II, 313. y-Benzylthiol-aβ-dimethyl-n-butyric acid, A., II, 182.

2-Benzyl-1:3:5-triazine, and its derivatives, A., II, 349. 1:1'-Benzyltriazolyl-2:3-benzanthraquinone, A.,

II, 60. N-Benzyl-N'-triphenylmethylcarbamide, A., II, 306.

Berberis nepalensis. See Mahonia nepalensis.

Beriberi, among Somali troops in East Africa command, A., III, 46.

infantile, diagnosis of, A., 11I, 269. Beryl, effect of heat on properties of, A., I, 71.

U.S.S.R., rare elements in, A., I, 48. Beryllium, luminous excitation of, atomic-ray apparatus for, A., I, 73.

nuclear photo-effect in, A., I, 163. oxidation of, A., I, 179. vapour pressure of, A., I, 148.

Beryllium alloys with copper, $a \cdot (a + \gamma)$ phase in, A., I, 198. use of, in instruments, C., 146.

Beryllium hydroxide, absorption by, of nitrous gases, A., I, 35.

oxide, equilibrium of, with boron and lithium oxides, A., I, 276. with water, A., I, 250.

sulphide, heat of formation of, A., I, 203. tungstate, A., I, 89.

Beryllium determination :-

determination of, in minerals and rocks, photometrically, C., 106.

eta vulgaris, var. maritima, as cause of pollenosis in Buenos Aires, A., III, 704. Betaine, relation of, to arsenocholine, choline,

and methionine, in chicks, A., III, 484. spectrum of, Raman, A., I, 4.

Betatron, physical principles of, A., I, 209. Betatron pole faces, shape of, A., I, 1.

Bethogenin, A., II, 21. derivatives of, A., II, 22.

Beverages, alcoholic, determination in, of acidity, C., 32. of pH, C., 32. high-protein, A., III, 265.

Beyerite, A., I, 136.

Bezoar, as cause of intestinal obstruction, A., III, 657.

Bile, amylase in. See under Amylase.

cholesterol concentration in, effect of diet on, A., III, 41.

collection of, from human patients with choledochostomy tubes, A., III, 540. determination in, of bile acids and their salts,

C., 29.

of cholates, C., 176.

diastase in. See under Diastase.

elimination of zinc in, measured by its radioactive isotope, in dogs, A., III, 213. flow of, inhibition of, after colon distension

and nerve supply stimulation, A., III, 257. non-saponifiable fraction of, alcohols of, and

their derivatives, A., II, 301. penicillin excretion in, A., III, 358.

sulphanilamide and sulphapyridine in, in man, A., III, 53. Bile acids, A., II, 264, 341.

and their derivatives, A., II, 51, 105. degradation of, A., II, 265. metabolism of. See under Metabolism.

pharmacology of, A., III, 658.

Bile ducts, cancer of, A., III, 600. common, obstruction of, effect of, A., III 347. peristalsis of, A., III, 816.

intra- and extra-hepatic, congenital anomalies of, pathogensis of, A., III, 710.

stricture of, treatment of, with vitallium tubes, A., III, 257.

Bile pigments, A., II, 381.

Bile salts, cathartic action of, in mice, A., III, 681.

effect of, on action potentials of frog's sinus venosus, A., III, 169.

Biliary tract, colic of, postural treatment of, in relation to cholecystitis prevention, A., III, 257.

diseases of, A., III, 658.

disorders of, constipation due to, A., III, 257. emptying of, after section of vagi or all extrinsic nerves, A., III, 115.

histology of, A., III, 625. visualisation of, after barium meal, A., III, 257.

Bilirubin, determination of, in blood, A., III, 13; C., 28.

in blood-serum, C., 125. serum-, diazo-reaction of, C., 28. Biliselectan. See a-Phenyl-\$-3:5-diodo-4hydroxyphenylpropionic acid.

Bindweed, field. See Convolvulus arvensis. Biocolloids as high-molecular electrolytes, A., I.

Biological data, mathematical correlations of, C., 142.

Biological fluids, deproteinisation of, C., 193. determination in, of ascorbic acid and its derivatives, C., 85.

of pH, glass electrode for, C., 76.

Biological materials, determination in, of cadmium, C., 190. of cocarboxylase and thiamin, A., III, 672.

of pectin, A., III, 348.

optical activity of, heredity and influence of environmental factors on, A., III, 319. Biological properties, geometrical basis of, A.,

111, 347.

Biology, optical isomerides in, A., III, 137. periodicity mechanism in, A., III, 745. research in, fluorescence in, A., III, 597. specimens, cleaning and mounting of, poly-

vinyl alcohol for, A., III, 6. machine for shell freezing of, C., 93. trace elements in, A., III, 827.

Biopsy, handling of small material for, A., III, 238

paraffin method for, A., III, 522

Biotin, content of, in enzymes, A., III, 364. crystallisates, from egg yolk and liver, non-identity of, A., III, 354. deficiency of, effect of, on *Plasmodium*

lophuræ infection in chicks, A., III, 548.

on Trypanosoma lewisi infection duration in rat, A., III, 126. rats fed succinylsulphathiazole in

purified diets, A., III, 424.

determination of, with Lactobacillus casei, C., 93.

effect of, on chick spinal ganglia in tissue culture, A., III, 330.

on growth of fungi, A., III, 70. on susceptibility to malaria, A., III, 46.

egg-yolk, constitution of, A., II, 182. in meat and meat products, A., III, 47. liberation of, from avidin-biotin complex,

A., III, 47. rôle of, in nutrition of rhesus monkey, A., III,

126.

in pantothenic acid utilisation by rats, A., III, 47.

synthetic, A., III, 47. value of, in diet of rats fed succinylsulphathiazole, A., III, 200. See also Vitamin-H.

β-Biotin, A., III, 487.

Birch-tar oil, constituents of, A., II, 165.

Birch trees, white and yellow, sugar formation by, A., III, 443.

Birds, arteries of. See under Arteries. classification of, serology of, A., III, 6. development of, temperature and, A., III, 388. navigation of, sensory basis of, A., III, 647.

Bis-N4-acetylsulphanilamide, imino-, A., II, 277. Bisallylaminediazidocopper, A., I. 290. Bis-β-aminoethyl sulphoxide, and its dihydro-bromide and dihydrochloride, A., II, 92.

Bis-β-aminoethylsulphone, dihydrochloride, A., II, 92.

8-Bis-y-aminopropylamino-6-methoxyquinoline trihydrochloride, A., II, 56.

Bis-2-aminothiazolediazidocopper, A., I, 290. Bisbenzylaminediazidocopper, A., I, 290.

4:5-Bis(benzylideneamino)-1-phenyl-3-methylpyrazole, A., II, 238.

Bisbornylaminediazidocopper, A., I, 290. (+)-Bis-a-carbethoxybenzyl sulphite, A., II, 150. 4:4" -Bis-a-chlorobenzhydryl-p-quaterphenyl, A., II, 189.

4:4"-Bis-a-chlorobenzhydryl-p-terphenyl, A., II, 189.

4:4"-Eis-(a-chlorodi-p-xenylmethyl)-p-terphenyl, A , II, 189.

aa-Bis-(B'-chloroethyl)phenylacetonitrile, A., II,

Bis-(2-chlorocyclohexyl) sulphite, A., II, 188.

Bis-(8-y-chloropropylamino-6-methoxy-5quinolyl) sulphide, and its hydrochloride, A., II, 57.

4:4'-Bis-(a-chloro-a-p-xenylbenzyl)-p-terphenyl, A., II, 189.

Bis-(8-y-diethylaminopropylamino-6-methoxy-5quinolyl) sulphide, and its hydrochloride, A., II. 57.

s-Bis-2-dicyclohexylylcarbamide, A., II, 294. Bisdimethylaminodecahydronaphthalene, A., II,

 $a\beta$ -Bis(dimethylamino)propionic acid, ethyl ester, and its derivatives, A., II, 323.

Bis-2:6-dimethylpyridinediazidocopper, A., I, 290.

Bisdinaphthaxanthen, A., II, 142.

s-Bis-o-diphenylylcarbamide, A., II, 294. Bis-p-diphenylyl-4'-methoxy-p-diphenylyl-

carbinol, A., II, 258.

Bis-p-diphenylylquinomethane, A., II, 258. $\alpha\alpha$ -Bis-(β' -ethoxyethyl)phenylautonitrile, A., II, 273.

Biscyclohexylaminediazidocopper, A., I, 290. 4:4'''-Bis-a-hydroxybenzhydryl-p-quaterphenyl, A., II, 189.

4:4"-Bis-a-hydroxybenzhydryl-p-terphenyl, A., II, 189.

4:4''-Bis-(a-hydroxydi-p-xenylmethyl)-pterphenyl, A., II, 189.

aa-Bis-(β' -hydroxyethyl)phenylacetonitrile, 11, 272.

ethers, action on, of hydrogen halides, A., II, 272.

aa-Bis-(\(\beta'\)-hydroxyethyl)-o-tolylacetonitrile, A.

Bishydroxyindone, constitution and reactions of, A., II, 340.

4:4'-Bis-8"-hydroxyquinoline-5"-azodiphenyl, A., II, 144.

Bisdihydroxytetraphenylethane orthosilicate, A., II, 130.

4:4"-Bis-(a-hydroxy-a-p-xenylbenzyl)-p-terphenyl, A., II, 189

Bis-1'-keto-2'-carbethoxy-1':2'-dihydrofurano-1':2'-2:3-1":2'':5:6-p-xylene, A., II, 54. Bis-1'-keto-1':2'-dihydrofurano-

1':2'-2:3-1":2"-5:6-p-xylene, A., II, 54. aa'-Bis-(β-methoxymethoxyethyl)phenylacetonitrile, A., II, 272.

Bis-2-(3-methyl-perinaphtha-1:3-thiazine)pentamethincyanine iodide, A., II, 26.

Bis-2-(3-methyl-per:paphtha-1:3-thiazine) trimethincyanine iodide, methosulphate, A.,

Bis-7-methylquinolinediazidocopper, A., I, 290.

Bismodite, A., I, 135. Bismuth crystals, magnetic susceptibility of, A., I, 217.

equilibrium of, with its molten fluoride, A., I,

Bismuth alloys, analysis of, spectrochemically, C., 62.

Bismuth compounds, treatment with, of syphilis, A., III, 835.

Bismuth alkali molybdates and tungstates, A., I, 231.

arsenates, mineral, A., I. 136.

carbonates, mineralogy of, A., I, 136; C., 110. sesquioxide, equilibria of, with barium, calcium, and strontium oxides, A., I, 37. oxides, mineralogy of, A., I, 136; C., 110. X-ray structure of, A., I, 195.

oxyhalides, X-ray structure of, A., I, 195.

Bismuth determination and separation :analysis of, polarographic, in dilute solution. C., 63.

determination in, of impurities, C., 63. determination of, in organic compounds, C.,

separation of, from cadmium, copper, and lead, by means of pyridine, C., 110.

Bisnicotinylacetone, cobalt chloride, A., II, 377. copper chloride and sulphate, A., II, 377. ethylenediamine metallic complexes of, and their dihydrochlorides, A., II, 377. ferric chloride, A., II, 377.

nickel chloride and sulphate, A., II, 377. silver nitrate, A., II, 377.

Bisnicotinylacetone, zinc chloride and sulphate, A., II, 377.

Bisnorcholanic acid, 3(a):11(a)- and $3(\beta):11(a)$ - $d\iota$ hydroxy-, 3(a)- and $3(\beta)$ -acetyl derivatives, methyl esters, A., II, 265.

3:12-dihydroxy-, 3:12-diacetyl derivative, methyl ester, A., II, 343.

 $3(a):12(\beta)-dihydroxy-$, derivatives of, A., II,

△11-Bisnorcholenic acid. $3(\beta)$ -hydroxy-, $3(\beta)$ -acetyl derivative, methyl ester, A., II, 265. Bisnorlupandicarboxylic acid, hydroxy-, acetyl

derivative, methyl ester, A., II, 108. dimethyl ester, A., II, 108.

Bis-(N-pantoyl- β -aminoethyl) sulphide, A., II, 92.

disulphide, A., II, 92. sulphoxide, A., II, 92.

Bis- $(N-pantoyl-\beta-aminoethyl)$ sulphone, A., II,

Bis(phenyl-p-bromophenyl-p-dimethylaminophenylphosphine)palladium, dichloro-, A., II, 283.

Bis(phenyl-p-bromophenylethylphosphine) palladium, dichloro-, A., II, 283.

Bis(phenylcarbamylsemicarbazide), A., II, 365. Bis-(4-phenyl-1-methylpiperidyl-4-methyl)amine, A., II, 272.

Bis-β-picolinediazidocopper, A., I, 290. Bispiperidinediazidocopper, A., I, 290.

Bispyridiniumtetrabromotetrakispyridine μ-dibromodirhodium, A., II, 377.

Bispyridinium tetrachlorotetrakispyridinium hexachlorobispyridine u dichlorodirhodium, A., II, 377.

Bisisoquinolinediazidocopper, A., I, 290. αζ-Bis-N-salicylideneammodimethylenemannitol, and its salts, A., II, 184.

Bistetra-\beta-naphthylaminediazidocopper, A., I,

Bistriethanolaminediazido-oxocopper, A., I, 290. Bis-2:4:6-trimethylpyridinediazidocopper, A., I, 290.

 $\alpha\alpha$ -Bis-(β' -vinyloxyethyl)phenylacetonitrile, II, 272.

aa-Bis-(\(\beta'\)-vinyloxyethyl)-o-tolylacetonitrile, A., II, 273.

Bitumen, detection of, in rocks, by luminescence, A., I, 71.

determination of, in pavement, C., 17. in sulphur, C., 17.

recovery of, from road emulsions, C., 164. Bitumen emulsions, determination in, of pH, C.,

17. recovery of bitumen from, C., 164.

Bituminous emulsions, determination in, of asphalt, C., 68.

materials, weathering of, C., 68. Biuret, properties of, A., II, 71.

Bixbyite, A., I, 92, 260.

"Black dermographism," A., III, 136. Black gum. See Nyssa sylvatica.

Blackberries, citric and isocitric acids in, A., III, 315.

tetraploid, production of, A., III, 854. Blackcurrants. See under Currants.

Blacktongue, porphyrin excretion and urorosein reaction in, in dogs, A., III, 269.

Blackwater fever, after atebrin dosage, A., III, 428.

Ivsolecithin fragility in, A., III, 7. treatment of, A., III, 762.

See also Hæmoglobinuria.

Bladder, atony of, urinary retention due to, treatment of, with furmethide, A., III, 279. chorionepithelioma of, in men, A., III, 600. diverticulum of, A., III, 90.

exstrophy of, in twins, A., III, 317.

malakoplakia of, A., III, 476. stone in, in relation to vitamin-A deficiency A., III, 38.

tumours of, cancerous, A., III, 481. chemical carcinogenesis and, A., III, 599. Blankets, electric, warming action of, A., III,

763. Blast, injuries from, A., III, 415. under-water, injuries from, A., III, 347.

- Blast-furnace cement. See under Cement. Blastogenesis, experimental, developing factors in, A., III, 661.
- Blastomatogenics, abnormal ciliates produced by, multiple constitution of, A., III, 663. Blattella germanica, action of pyrethrum on, A.,

III, 362. wings of, hemolymph circulation in, A., III, 577.

Bleeding. See Hæmorrhage.

ferrite-rich roasting products of, C., Blende, 107.

formation and extraction of A., I, 159. Blicca björkna, A., II, 84.

Blindness, bilateral, due to occipital lobe lesions, A., III, 647.

from eclipse, A., III, 183.

night, after exposure to light, A., III, 24. vitamin-A in relation to, A., III, 24. prevention of, in ophthalmology, A., III, 23.

Bloat, production and prevention of, in cattle on lucerne pasture, A., III, 418.

Blood, absorption of, from gastrointestinal tract in azotæmia, A., III, 12.

acid anion displacement in, and recovery after exercise, A., III, 325.

acid-base equilibrium of, after exercise, A., III, 394.

stability of, in animals of different ages, A., III, 13.

adenosine compounds and phosphates in, in shocked rabbits, A., III, 797. adrenaline level of, A., III, 796.

alcohol curve of, effect of alcohol concentration on, A., III, 60.

alkali reserve and molar concentration of electrolytes in, of scorbutic guinea-pigs, A., III, 169.

ammonia in, A., III, 524. anticoagulant for, 3:3'-ethylenebis-(4-hydroxycoumarin) as, A., III, 717. antigens of, in cattle, A., III, 226.

antithyroidal substances of, A., III, 806. arthritic and normal, spectrography of, A.,

III, 524. ascorbic acid in, in dairy cattle, A., III, 394.

bank of, operation of service of, A., III, 715. organisation and operation of, A., III, 574.

buffy coat of, ether-extractable substance from, which contracts smooth muscle, A., III. 579.

cadaver, dried plasma from, use of, A., III, 454.

calcium in, effect of lead on, A., III, 61. changes in, during treatment with sulphanilamide and its derivatives, A., III, 167.

cholesterol in, effect of diet on, A., III, 41. effect of estradiol dipropionate testosterone propionate on, in castrate rabbits, A., III, 344.

choline-esterase level in, effect of muscular exercise on, in myasthenia gravis and normal patients, A., III, 13. circulating, after blood loss or red cell

transfusion, A., III, 790.

citrated, administration of, and its effect on temperature and white cell count, A., III, 715.

transfusion with, caution against, A., III, 392.

effect of, on hypoprothrombinæmia, A., III, 392.

coagulability of, test for, A., III, 635; C., 174.

coagulation of, A., III, 95, 324.

control of, with dicoumarin, A., III, 523. effect on, of colloidal aluminium hydroxide,

A., III, 392. of papain, fibrin, and ninhydrin, A., III,

of rectally-administered dicumarol, A., III, 324.

of salicylates, A., III, 96.

of sodium thiosulphate, A., III, 10.

of stirring, A., III, 453.
inhibition of, by polysaccharide polysulphuric esters, A., III, 95.

coagulation of, magnesium-calcium antagonism in, A., III, 453. Blood,

nervous regulation of, A., III, 453. photo-electric observation of, A., III, 165. sodium chloride concentration and, A., III, 165.

coagulation time and platelet count of, after operation, A., III, 452.

concentration of, effect of nembutal-ether anæsthesia on, A., III, 238. culture medium from, A., III, 294.

density of, and of plasma and serum, C., 124. effect on, of duodenal distension, A., III,

of heparin, A., III, 95. desiccated, pellets of, use of, in blood-estrogen assay, A., III, 468.

disorders in, prothrombin in, A., III, 453. effect on, of glycogen injection in dogs, A., III, 97.

of hæmoglobin injection in dogs, A., III, 715.

of sulphonamides, A., III, 790.

examination of, in pregnancy, A., III, 165. extravascular fluid and, exchange rate of substances between, A., III, 576.

fat in, effect of hæmorrhage on, A., III, 8. filtrates, determination in, of amino-acids,

C., 26. fish, "Bohr effect" in, A., III, 244. density of, during anoxia, A., III, 166.

flow of. See Blood circulation. formation of, effect of food-proteins on, A., III, 168.

role of tryptophan in, A., III, 573. friction coefficient of, dependence of, on

capillary diameter, A., III, 16. glutamine-like substance in, A., III, 12.

groups, among negroes in New York City, A., ÎII, 787.

Muslim, in United Provinces of India, A., III. 322.

relation between allergy, dental decay, personality and, in New Zealand, A., III,

groups, A, substance of, isolation of, from ovarian cyst fluids, A., III, 522.

A and B, determination of, macroscopically, A., III, 791.

A, B, N, and Rh, substances of, occurrence of, in body fluids and tissues, A., III, 9. A, B, and O, substances of, in ovarian cyst fluids, A., III, 391.

hæmoglobin content of, in cancer-strain mice, A., III, 748.

human, composition of, at Curitiba, A., III,

hypocoagulable, and normal, effect of hemorrhage on, A., III, 392. in cholera, A., III, 168.

infected with Clostridium and Streptococcus, bacteriostatic action of euflavine and proflavine on, A., III, 221.

infusion of, into bone marrow, A., III, 455. intragroup, transfusion of, reactions of, Rh factor in, A., III, 791.

ketone bodies in, in relation to carbohydrate metabolism in muscular exercise, A., III 394.

lactic acid in, after fructose, galactose, or glucose ingestion, A., III, 491. in animals, A., III, 576.

lipins of, effect on, of fasting in mice, A., III, 454.

species variation in, A., III, 524.

loss of, replacement therapy for, chart for, A., III, 94.

magnesium in, effect on, of magnesium sulphate, sodium iodide, thyroxine, and thyrotropic hormone, A., III, 524.

N-factor in, immunisation against, A., III, 8. occult, detection of, with phenolphthalein, C., 76.

of dogs exposed to low oxygen tension, A., III, 329.

oxygen, capacity of, determined with Bancroft manometer, C., 28. oxytocin-destroying principle of, A., III, 470.

Blood, peripheral, effect on, of estrogens in mice, A., III, 593.

hæmatology of, in dogs, A., III, 162.

morphology of, in dogs, A., 111, 162.
morphology of, in rats, A., III, 39.
phosphatase in, in pregnancy, indicating
twins, A., III, 394.

phosphate in, effect of insulin on, A., III, 407. phosphorus in, concentration of, in dairy cattle, A., III, 394.

level of, in range ewes, A., III, 575. picture of, effect on, of colloid metals, A., III,

573. in furunculosis induced in fish, A., III, 524. variability in, in women, A., III, 390.

placental, preservation of, A., III, 454. potassium concentration rise in, after ischæmia of muscle masses, A., III, 12.

preservative for, disodium citrate-glucoso mixture as, A., III, 239.

proteins in, chemistry of, A., III, 716.

in man, A., III, 325. prothrombin levels of, in newborn, A., III, 791.

pyruvic acid in, A., III, 718.

behaviour and detection of, in adults, A., III, 325.

effect of adrenalectomy on, in rats, A., III,

effect of exercise on, A., III, 12.

regeneration of, in relation to erythrocyte life span, A., III, 321.

relation of thiamin to, A., III, 752. role of diet in, A., III, 790.

replacement of, in rats, A., III, 574. Rh factor in, A., III, 632.

erythroblastosis fœtalis and, A., III, 7. in relation to obstetrics, A., III, 391.

in relation to racial origins, A., III, 7. variants of, heredity of, A., III, 94.

Rh types of, and heredity, A., III, 322, 451, 632.

genetics of, A., III, 322.

samples, obtaining of, from hepatic vein in man, A., III, 457.

sampling of, for hæmoglobin determination, C., 27.

shed, vasoconstrictor action of, effect of heparin on, A., III, 525. sheep's, English, in relation to constitutional

characters, A., III, 238.

staining of, with cosin-azure-methylene-blue, A., III, 161. storage of, citric acid-sodium citrate-glucose

mixtures for, A., III, 239. stored, bacterial contamination of, A., III,

616. bacterial growths in, sulphonamides for suppression of, A., III, 391.

methæmoglobin-oxyhæmoglobin ratio in, C., 125.

substitutes for, effect of feeding with, on serum-protein regeneration and weight in

hypoproteinæmic rats, A., III, 796. in shock treatment, A., III, 457, 577. isinglass as, in hæmorrhage and shock, A., III, 11.

sugars in, A., II, 185. curve of, A., III, 455.

diurnal rhythm in, in rats, A., III, 524. effect of focal destruction of hypothalamic

regions on, A., III, 179. effect of level of, on occipital cortical potentials, A., III, 725.

regulation of, endocrines in, A., III, 587. response of, to insulin injection, effect of dehydration and fasting on, in chicks, A., III, 536.

venous, effect on, of tourniquets, A., III, 12. thiocyanates in, and their relation to blood pressure, A., III, 494.

transfusion of, anuria after, A., III, 391.

direct, A., III, 631. emergency, and blood derivatives, A., III, 790.

fatal, due to Rh factor, A., III, 166. jaundice after, A., III, 166, 239. milk bottle as, flask for, A., III, 166. organo-mineral elements in, A., III, 715. Blood-capillaries, permeability of, effect of

Blood, transfusion of, reactions in, due to intragroup incompatibilities, A., III, 715. Rh factor in, in erythroblastosis fætalis, A., III, 94. Rh subtypes in, A., III, 451. technique development of, A., III, 454. treatment with, of anæmia in newborn, A., III, 166. of hemophilia, A., III, 165. unit for, in hospital, A., III, 166. viscose tubing for, A., III, 790. typing of, A., III, 322. macroscopic, A., III, 163. urea in, in pregnant Bantu women, A., III, 718. uric acid in, lowering of, by uricase injections, A., III, 325. vasoconstrictor substance in, during shock, pregnancy, A., III, 537. vasopressin-inhibiting vitamin-A level of, in rats, A., III, 43. regulation of, in newborn infants, A., ĬII, 241. volume of, effect on, of concentrated human and bovine serum-albumin, after blood loss in man, A., III, 168. in normal animals, A., III, 450. photometer for determination of, C., 124. Blood analysis :detection in, of histamine in Trichinella spiralis infected guinea-pigs and rats, A., III. 428. determination in, of acetoin and diacetyl, C., 27. of acetone and diacetic acid, C., 76. of allantoin, C., 174. of amino-acid-nitrogen, C., 125. of amylase, C., 175. of aneurin pyrophosphate, C., 76. of arsenates and arsenites, C., 174. of ascorbic acid, C., 27, 77. of bilirubin, C., 28. of bromine, C., 126. of calcium, use of trichloroacetic acid in, C., 126. of carbon monoxide, C., 76. of carbonylhemoglobin and methemoglobin, spectrophotometrically, C., 125. of cell volume and hæmoglobin, C., 124. of cholates, C., 176. of ethyl alcohol, A., III, 276; C., 174. and its absorption and distribution, C.; 76. of fatty acids, C., 174. of glucose, microchemically, C., 125. of glutamine-like substance, C., 27. of halogenated hydrocarbons, C., 174. of pH, apparatus for, C., 141 glass electrode for, C., 76. of inulin, step-photometrically, C., 128. of lead, spectrographically, A., III, 326; C., 76. of methemoglobin, A., III, 715. of nicotinic acid, C., 76. of æstrogen, use of blood pellets in, A., III, of phenols by ether extraction, C., 28. of sugar, C., 27. of sulphonamides, C., 27, 77. of urea, colorimetrically, C., 126. Blood-capillaries, arm and hand, permeability of, effect of histamine injection into brachial artery on, A., III, 526. calibre changes in, in living mammal, A., III, diameter of, dependence of friction coefficient

of human blood on, A., III, 16.

age, A., III, 457.
permeability of, dermofluorometer

determination of, A., III, 171.

526.

327.

fragility of, effect of rutin on, in man, A., III,

in relation to diabetes, hypertension, and

effect of adrenal cortical preparations and carbon are irradiation on, A., III,

vitamin-D on, studied with T-1824, A., III, 397. in burns and burn shock, A., III, 526. in traumatic shock, A., III, 173. to intravenous gelatin, A., III, 242. permeability and structure of, A., III, 797. resistance of, ascorbic acid levels and, A., III, 488. skin, permeability of, A., III, 99. Blood circulation, arterial, of extremities, 640. cerebral, measurement of, in macaque monkey, A., III, 327. coronary, collateral, A., III, 395. effect on, of atropine in dogs with denervated hearts, A., III, 395. hearts, A., III, 395. coronary and pulmonary, relation between, A., III, 170. deficiency of, in extremities, A., III, 215. dermofluorometer for determination of, A., III, 171. effect on, of anæsthesia, in dogs subjected to graded hæmorrhage, A., III, 720. III. 526. of pleural effusion, in man, A., III, 642. gravitational interference with, counteraction of, in rabbits, A., III, 327. hind-limb, ten years after lumbar sympathetic ganglionectomy, A., III, 640. inco-ordination of, determined by response on subject arising, A., III, 172. of combatants during World War I, A., III, 16. postoperative stagnation of, prevention of, apparatus for, A., III, 327. reactions in, of rats traumatised in Noble-Collip drum, A., III, 527. regulation of, and its failure, A., III, 15. renal, environmental temperature and, A., III, 37. in shock, A., III, 743. measurement of, C., 126. skin, in shock, A., III, 798. substances influencing, action of, on enzymes, A., III, 215. time of, clinical study of, A., III, 640. determination of, A., III, 16, 171. with saccharin method, A., III, 171. 98. venous, in lower extremities in pregnancy, A., III, 328. Blood-corpuscles, agglutinated, cold, hæmolytic effect of shaking on, A., III, 391. coagulant substances of, A., III, 453. fragility of, induced by stasis, increase of, A., III, 239. histamine release from, effect of trauma on, A., III, 452. human, Rh antiserum production by inoculation of guinea-pigs with, A., III, 163. lead uptake by, measured with radioactive isotope, A., III, 452. locomotion of, in tissue cultures, A., III, 630. oval, linkage between, and A-B agglutinogens in man, A., III, 321. red, catalase from, A., III, 689. sterone acetate diet on, A., III, 130. gelatin on, in mice, A., III, 714. III, 7Ĭ4. concentrated, transfusion of, A., III, 166.

constituents of, for use in wound healing,

A., III, 321.

321 effect of sex hormones on, in domestic fowls, A., III, 111, 238. in photo-electric colorimeter, A., III, 630. eozymase synthesis in, nicotinic acid and nicotinamide in, in man, A., III, 162. erenated, osmotic behaviour of, A., III, 450. differences between, in negro and white subjects, A., III, 162. oscillometric index in relation to, A., III, effect on, of freezing, A., III, 94. of proplene glycol, A., III, 522. of X-rays, A., III, 390. fragility of, A., III, 630. "heat-resistance" of, as test for anæmia, A., III, 630. labelled with radioactive iron and stored in of exercise in dogs with denervated citrate, survival of, A., III, 791. lipin content of, effect of temperature on, A., III, 390. mouse, species differences in, A., III, 238. non-hæmatin iron in, A., III, 94. nucleated, in newly born infants in relation to maternal Rh compatibility, A., III, nuclei, acid phosphatase in, in chicks, A., under normal and shock conditions, A., III, 432. anaerobic glycolysis and oxygen consumption of, A., III, 390. of temperature, in human forearm, A., III, effect of sodium chloride on, A., III, 322. permeability of, A., III, 162. phosphatases in, A., III, 394, 691. polyagglutinability of, in man, A., III, 94. protoporphyrin concentration in, A., III, pseudoagglutination of, A., III, 163. removal of, from active circulation by sodium pentobarbital, A., III, 238. from cerebrospinal fluid, inefficacy of lumbar puncture for, A., III, 23. Rh factor of, isoimmunisation by, A., III, 574.sedimentation of, A., III, 163. rate of, in rheumatic fever in children, A., III, 714. in upper respiratory tract infections, A., III, 240. sedimentation reaction of, during pregnancy, A., III, 715. sensitisation of, reversibility of, A., III, 791. stored, sheep, for complement-fixation test, A., III, 513. transfused, fate of, A., III, 239. transfusion with, A., III, 631. studied through vascular system, A., III, treatment with, of anæmia, A., III, 166, 451. volume of, after hæmorrhage, A., III, 240. determination of, with fibringen, A., III, 391. washed, in saline, effect of, on hæmorrhagic shock, A., III, 798.
resistance of, to laking, relation of physical excretion to, A., III, 630. water of, and plasma, urea distribution between, A., III, 325. white, as index of pyrogenicity in fluids for intravenous use, A., III, 793. circulating, agglutination of, by antileucocytic sera, A., III, 716. counts of, effect of propylene glycol on, C., 126. in labour, A., III, 793. differentiation of, in counting chamber, by propylene glycol-aqueous stains, A., III, cation content of, effect of deoxycortico-sterone acetate and low-potassium in aged men and women, A., III, 240. leukæmic and normal, pyruvate metabolism by, A., III, 666.
morphology of, in stored blood, A., III, circulation and sedimentation rate of, effect of pneumococcus polysaccharide and 716. nuclein-like action on, of ether-insoluble clumping of, in Hayem's diluting fluid, A., fraction of beef-brain lipins, A., III, preservation of, with yeast extract in stored blood, A., III, 716. conglutination of, after gelatin solution administration, A., III, 163.

Blood-corpuscles, red, count of, effect of

ephedrine sulphate on, in man, A., III,

response of, to allantoin, pyrogens in, A.,

III, 634.

Blood diseases, in infants and children, A., III,

See also Anæmia, Hæmophilia, Leukæmia, etc.

Blood donors, fainting in, A., III, 631. hæmoglobin level in, A., III, 393.

Blood-plasma, amino-acid nitrogen of, in man, A., III, 12.

analysis of, in vitamin-K-deficient chicks, A., ПІ, 164.

angiotonase and renin substrate in, in dogs, Ă., III, 328.

ascorbic acid in, in college students, A., III,

resulting from normal intake by man, A., III, 424.

biological control and preparation of, A., III, $52\bar{4}.$

carotene content of, in relation to vitamin-A deficiency in cattle, A., III, 267.

carotene and vitamin-A level of, in rheumatic subjects, A., III, 635.

in young Bantus, Europeans, and Indians, A., III, 718.

citrated, physico-chemical properties of, effect of drying from frozen state on, A., III, 454.

clinical application of, A., III, 524. clot, tensile strength of, effect of anticoagulants, coagulants, and physical factors on, A., III, 453.

coagulation of, by heat, protective action of glucose in, A., III, 837.

by prostatic fluid and trypsin, A., III, 539. kephalin and thromboplastin in, in vitamin-K-deficient chicks, A., III, 165.

coagulation time and platelet count of, after operation, A., III, 451.

concentration of, A., III, 95.

dehydration and overhydration of, in relation to collapse in fever therapy, A., III, 11.

density of, effect on, of heparin, A., III, 95. deproteinisation of, by metaphosphates, A., III, 11.

desiccation of, A., III, 524.

determination in, of carotene and vitamin-A, C., 28.

of choline, C., 126.

of diffusible components, dialysis cell for, C., 124

of Evans-blue, C., 175.

of proteins, in boys, A., III, 716. of salicylic acid, C., 126.

of vitamin-A, carotene separation in, C., 126.

dried, desiccation of, A., III, 391

drying of, from frozen state, C., 124.

filtrates, determination in, of diodrastiodine, C., 30.

feetal and maternal, vitamin-A levels in, A., III, 394.

frozen, spirochætal survival in, A., III, 70. frozen and liquid, labile constituents physiological activity of, A., III, 632.

globulin fractions from, antibody concentrations in, A., III, 794.

isohæmagglutinins group-specific, concentration and separation, A., III, 791. hæmolysed, analysis of, C., 173.

hæmophilic and normal, antikephalin activity and prothrombin conversion rate of, A., III, 575.

kephalin, protamine, and antithromboplastic activity of, A., III, 324.

human, changes of, during second year of storage, A., III, 632.

cinchona alkaloids in, A., III, 758. despeciated bovine serum as substitute for,

A., III, 239. filtration of, enzymic cleaning of Berkefeld

candles used in, A., III, 454. fractionation products of, chemical, clinical, and immunological studies on, A., III,

preservation of, in liquid state, A., III, 632. stored, isohæmagglutinin titres of, A., III,

isoagglutinins of, inactivation of, A., III, 454.

Blood-plasma, loss of, replacement therapy for, chart for, A., III, 94.

osmotic pressure of, A., III, 793.

in man, A., III, 454. phospholipin circulation in, and transport to thoracic duct lymph, A., III, 325.

pooled, agglutinogen and isoagglutinin content of, A., III, 632.

preparation and preservation of, A., III, 454.

proteins, after hæmorrhage, A., III, 240. amino-acid composition of, A., III, 793. effect of hepatitis on, in immature and pregnant rats, A., III, 634.

effect of liver on, A., III, 717. fractionation of, by salt precipitation in infants and children, A., III, 167.

protein production in, amino-acid mixtures for, A., III, 634.

protein regeneration in, after hæmorrhage, influence of alimentation on, A., III, 634. prothrombin in, activity of, A., III, 96.

in mothers and infants at delivery, A., III, 240.

in normal and leukæmic rats, A., III, 543. prothrombin time of, in man, A., III, 164. recovery from, of diodrast and inulin, effect of filtrate pH on, C., 77.

stored, changes in, and their physiological effects, A., III, 574.

substitutes for, in shock treatment, A., III, 457.

thiamin in, A., III, 635.

transfused, effect and fate of, in dogs, A., III,

transfusion with, malaria transmissability by, A., III, 94.

treatment with, of anaphylactic shock in man, A., III, 715.

treatment with, of shock, A., III, 11.

in fever therapy, A., III, 173. vitamin-A in, A., III, 44.

during pregnancy, A., III, 168. in relation to its content in liver, A., III,

level of, clinical significance of, A., III, 796.

effect of vitamin-A dosage on, A., III, 824.

maintenance of, vitamin-A and carotene requirements for, in dairy calf, A., III, 422.

variations in, after administration in liver disease, A., III, 257.

volume of, in dehydration with and without salt loss in dogs, A., III, 324.

loss of, after lymph heart destruction in toads, A., III, 11.

maintenance of, extracellular fluid in, A., III, 167.

volume determination of, C., 173.

Blood-platelets, agglutination of, heparin on, A., III, 94. effect of

arterial and capillary, thrombi in, A., III,

effect on, of sulphonamides, A., III, 208. relation of, to hæmostasis, A., III, 324.

sources of, and their adhesiveness in thrombocytosis, A., III, 792.

Blood-pressure, arterial and venous, effect on, of ergometrine, oxytoxin, and pituitary extracts in pregnant women, A., III, 553.

determination of, auscultatory technique for, A., III, 15, 396.

during activity, rest, and sleep, C., 126. effect of changes of, on cerebral cortex, A., III, 645.

effect on, of carbon arc irradiation, A., III,

of diethylstilbæstrol, in albino rats, A., III, 31.

in normal and hypophysectomised rats, A., III, 172. of exercise of dogs with denervated hearts,

A., III, 395. of hypertension and renin, in rats, A., III,

of nitroparaffins in rabbits, A., III, 61.

Blood-pressure, effect on, of respiration in man, A., III, 457.

of surgical operations, A., III, 16.

in arms, disparity of, in normals and hypertensives, A., III, 798.

in midwifery, A., III, 576.

intracranial, increase of, arterial hypertension after, A., III, 641.

intramuscular, in life and death, A., III, 528. jugular, during lung inflation before and after pneumonectomy in anæsthetised dogs, A., III, 242.

readings of, significance of, in general surgery, A., III, 172.

regulation of, rôle of pressoreceptors in, in rabbits, A., III, 242.

sphygmomanometer cuff for, effect of, on venous pressure and in venipuncture, A., III, 641.

systolic, control of, adrenals and hypophysis in, A., III, 730.

variations in, effect of, on volume variation of finger tip, A., III, 396.

venous, effect on, of altitudes, in dogs, A., III, 578.

Blood-serum, albumin in. See under Albumin. amylase of. See under Amylase. anti-anthrax and normal, precipitation of, by

agar solutions, A., III, 696. antigonadotropic, action of, in immature rats,

A., III, 342. antihuman tissue, double zone phenomenon

in, A., III, 163. anti-codematiens, preparation and properties of, A., III, 618.

anti-Rh, standardisation of, A., III, 574. antitoxin and normal, proteolysis of protein

fractions from, by pepsin, A., III, 305. bovine, despeciated, as substitute for human plasma, A., III, 239.

tryptic digestion of, A., III, 612. calcium-protein system in, A., III, 528.

 β -carotone content of, chromatography of, in newborn infant, A., III, 796.

cholesterol in, effect of diet on, in normal, spayed, and hypothyroid monkeys, A., III, 718.

effect of soya-lecithin feeding on, in man, A., III, 576. values of, for infants and children, A., III,

choline-esterase in, effect of barbiturates on, A., III, 169. inhibition of, in relation to eserine dosage,

A., III, 607. seasonal variation in, in guinea-pigs, A., III,

635. colloid-osmotic pressure of, in rats bearing transplanted tumours, A., III, 121.

complement activity in, deterioration of, in man, A., III, 524. in healthy persons, mothers, and newborn

infants, A., III, 95. concentration of, A., III, 95.

apparatus for, C., 54. concentration and drying of, for intravenous use, A., III, 324. defatted," osmotic pressure of, in man, A.,

III, 326.

denaturation of, by alkali, effect of formaldehyde on, A., III, 241.

density of, effect on, of heparin, A., III, 95. detection in, of d-peptidases, A., III, 66.

determination in, of albumin and globulin, C., 125.

of bilirubin, A., III, 13; C., 125. of calcium, C., 77, 125, 174. of cholesterol, C., 28. of Evans-blue, C., 28, 175. of globulin, C., 77. of inulin C., 28

of inulin, C., 28. of proteins, C., 126, 174. of protein bound iodine, C., 174.

of sulphonamides, C., 77. of tocopherol, C., 85.

diastase in, in newborn infant, A., III, 635. disease. See Scrum-sickness.

electrophoretic pattern in, in burns, A., III, 9.

200 Blood-serum, erythropoietic substance in, in anæmic animals, A., III, 321. ether-extractable substance from, which contracts smooth muscle, A., III, 579. a-globulin fraction of, in normal and hypophysectomised rats, A., III, 635. glutamine-like substance in, effect of insulin hypoglycæmia and glucose administration on, A., III, 12. gonadotropin in, A., III, 471. guinea-pig and human, anti-human hæmagglutinins and anti-Rh antibody in, A., Ill, 633. hæmolytic, immune and normal, effect of cholesterol and lecithin on, A., III, 163. horse, ψ -choline-esterase from, A., III, 499. hydroxyapatite in, A., III, 525. immune, synthetic, preparation of, A., III, treatment with, of typhoid fever, A., III, 207. lipins of, A., III, 168. effect of vitamin-A on, in normal and deficient rats, A., III, 43. of Rh-positive people, A., III, 791 osmotic activity of, in man, A., III, 454. ox, renin substrate from, A., III, 174. phosphatase of. See under Phosphatase. phosphatide-sterol-protein complexes homogeneity of, by electrophoresis ultracentrifugation, A., III, 636. in. pooled, agglutinin titres of, A., III, 391. human, group-specific substances in, A., III, 39Î. precipitating, preparation of, for identification of animal species, A., III, 94. pregnancy, mare's, response of bovine ovary to, A., III, 654. response of hypohysectomised rats to, A., III, 111. treatment with, of acne vulgaris, A., III, 591. tumour-like changes in testicles of mice after injection with, A., III, 479. treatment with, of male chorioepithelioma, A., III, 472. procaine-esterase in, A., III, 65, 833. otective action of, hæmolysin, A., III, 164. protective against natural proteins, absorption of, from guinea-pig intestine, A., III, 657. amino-acid degradation and, A., III, 392. anaphylaxis to, in guinea-pigs. A., III, 779.colloidal gold reactions and kephalin floculation in relation to, A., III, 9. digitoxin-binding power of, in rabbits, A., III, 554. fractionation of, by salt precipitation in infants and children, A., III, 167. in pregnant Bantu women, A., III, 718. low-density, in man, A., III, 454. relaxin concentration in, in pregnant and post-partum rabbits, A., III, 468. stabilising of, for blood typing, A., III, 791. storage of, changes occurring on, and their physiological effects, A., III, 574. sulphuric acid test for, A., III, 9. tocopherol level in, during tocopherol therapy, A., III, 128. transfused, effect and fate of, in dogs, A., III, 632.treatment with, of burn shock, A., III, 173. of meningitis, A., III, 493. of meningococcal infections, A., III, 757. typing, by treatment of donors with blood group specific substances, A., III, 522. ultrafiltrates of, determination in, of thiourea, C., 77.

Weil-Felix reaction in, A., III, 617.

Blood-vessels, changes in, in asthma, A., III,

defect of, in swine with inherited bleeding

fragility of, effect of various agents on, A.,

fragility and permeability of, A., III, 397.

See also Antisera.

disease, A., III, 526.

722,

Blood-vessels, ileum and jejunum, in man and animals, A., III, 385. of nerves, visualisation of, A., III, 626. peripheral, vasoconstriction and vasodilation of, effect of anæsthesia on, A., III, 98. respiration of, effect of age on, A., III, 489. small, ear, effect on, of adrenaline, ephedrine, ergotoxine, and pitressin, in rabbits, A., III, tone of, test for, and its application to vascular disease in man, A., III, 640. uterine. See under Uterus. vasomotor tone of, A., III, 98. walls of, cytolytic effect of saponin on, A., III, 242. See also Arteries, Blood-capillaries, Veins, etc. Bluegrass. See under Grass. Bodenstein, Max, chemical kinetics and, A., I, Body, human, d-peptidasc in, A., III, 767. weight of, medulla surface area and nerve dimensions in relation to, in birds and mammals, A., III, 581. Body fluids, detection in, of arsenic, C., 190. determination in, of acetylcholine and potassium, C., 92. of nicotinic acid, C., 76. Boerhaavia diffusa, constituents of, and of Trianthema portulacastrum, A., II, 207. Boiling point, determination of, of organic liquids, C., 48. Boiling-point apparatus, C., 117. Cottrell, modified, C., 118. Boletus edulis, bios-growth substance in, A., III, Bolometer, fast and sensitive, for use with galvanometer and infra-red spectrometer, Č., 98. Bombyx, embryonic diapause in, elimination of, by sublethal thermal doses, A., III, 787. pigment formation in, A., III, 253. Bombyx mori, metamorphosis in relation to parotid gland of, A., III, 746. Bonds. See Linkings. Bone, age of, determination of, in children, A., ÍII, 1. analysis of, C., 177. calcium in, deposition and mobilisation of, by electrolytes, A., III, 317. chemistry of, during starvation, A., III, 270. decalcification of, A., III, 522. dysplasia of, fibrous, A., III, 157. dystrophy of, unusual, A., III, 90. fractures of, gunshot, treatment of, A., III, healing of, effect of parathyroid hormone and vitamin-D on, A., III, 92. idiopathic, multiple, A., III, 234. human, X-ray diffraction study of, A., III, 709. iliac, chondrosarcoma of, with metastasis to mammary region, A., III, 119. infarcts of, in caisson and non-caisson workers, A., III, 799. lead in, A., III, 2, 709. long, growth of, in children, A., III, 89. hyperossification of, produced by cestradiol benzoate dosage in rats, A., III, 735. malformations of, effect of maternal rachitogenic diet on, in young rats, A., III, 272. metatarsal, fracture of, due to marching, A., III, 234. structure of, effect of vitamin-D on, in rats on low-calcium diets, A., III, 127. suture material for, living and preserved fascia as, A., III, 90. temporal, petrous portion of, bilateral fracture of, acoustic functional tests after, A., III, 406. tissues, response of, to alizarin dyes and dye fixation, A., III, 57. See also Cartilage and Epiphyses. Bone diseases, granuloma of, eosinophilic, A., III, 713. eosinophilic or solitary, and Hand-Schueller-Christian syndrome, A., III, 570. neoplastic, diagnosis of, A., III, 417.

treatment of, with penicillin, A., III, 679.

Bone diseases, unusual, with neurologic changes, A., III, 19. See also Albers-Schonberg disease, Osteomalacia, Osteosclerosis, etc. Bone-marrow, as site for reception of infusions, transfusions, and anæsthetic agents, A., III, blood infusion into, A., III, 455. cells, counting of, A., III, 6. growth of, effect of leukocytosis-promoting factor on, A., III, 167. effect on, of cestrogens in mice, A., III, 593. hæmatology of, in dogs, A., III, 162. Iymphocyte count of, in rabbits, A., III, 716. of normal dogs, A., III, 238. Pasteur effect in, A., III, 129. spinal, lipins of, in man, A., III, 20. sternal, aspiration of, A., III, 93. in aged, A., III, 630. tissue- and tumour-metabolism of, A., III, 479. transfusions into, in infants and children, A., III, 575. See also Osteomyelitis. Bongo. See Boocercus euryceros. Boocercus euryceros, external characters of, A., III, 625. Booth, James Curtis, 1810-1888, A., I, 69. iBootis B, spectrum of, A., I, 161. Borates. See under Boron. Borax. See Sodium diborate. Boric seid. See under Boron. Borneol, detoxication of, by glycuronic acid, in man, A., III, 256. Boron, A., I, 44. crystalline, preparation and properties of, A., in hot springs at Tokaanu, Lake Taupo, A., I, 24... Boron compounds, deficiency of, in plants, A., III, 378, 379. Boron tribromide, critical density and temperature data for, A., I, 8. equilibrium of, with bromine, A., I, 203. spectrum of, Kaman, A., I, 192. carbide, crystal structure of, A., I, 99, 269. trichloride, addition product p-anisidine, A., II, 147. of, with nitrobenzene, A., II, 148. fluorination of, A., I, 44. reaction of, with p-anisidine, benzylamine, and nitrobenzene, A., II, 147. with phosphoryl chloride, A., I, 23. spectrum of, Raman, A., I, 192. trifluoride, additive compounds of, hexamethylenetetramine, A., I, 22 catalysis by, of chemical reactions, A., II, 89. compounds of, with trimethylamine, A., I, 44. condensations with, in Fischer indole synthesis, A., II, 170. dimethyl ether compound of, dissociation of, A., I, 126. equilibrium of, with carbon, phosphorus, and sulphur fluorides, A., I, 128. organic reactions with, A., II, 10, 156. reaction of, with aluminium, silicon, and titanium oxides, and with silicates, A., I, 159. trioxide, density of melts of, with silica, A., I, 198. equilibrium of, with beryllium and lithium oxides, A., I, 276. Borie acid, and its alkali salts, A., I, 44. biology and chemistry of, in aqueous solutions, A., III, 378. determination in, of iron with sulphosalicylic acid, C., 65. determination of, colorimetrically, with pentamethylquercitin, C., 60. in nickel electrolytes, C., 7. volumetrically, A., I, 44; C., 7. fluorescence reactions of, with o-hydroxy-carbonyl compounds, C., 116, 168. ionisation of, in presence of sodium chloride, A., I, 16. therapeutic action of, A., III, 209.

Boron:-

Borates, polymers of, A., I, 276.

Metaborates, adsorption of, by plants, and their solubility, A., III, 378.

Boron organic compounds, containing nitrogen, A., II, 147.

Boron tri-p-anisidide, A., II, 148. Boron detection and determination:

detection of, C., 60.

determination of, in plant materials, spectrographically, C., 40. in plants and soils, C., 90.

Bottles, milk, as blood transfusion flask, A., III, 166.

Bovines, prenatal development of, A., III, 711. Box for holding rabbits for minor operations, C., 194.

Boys, school-, growth of, in wartime, A., III, 823.

Brachium conjunctivum, destruction stimulation of, A., III, 179.

Brachium pontis, termination of, A., III, 21.

Brain, acetylcholine distribution in, in rats of different ages, A., III, 401.

armadillo's, non-tectal portions of, nuclear pattern of, A., III, 21.

bat's and shrew's, non-tectal portions of, nuclear pattern of, A., III, 21. blood-oxygen from, in post-mature fætal rabbits, A., III, 579.

cerebrosides of, A., III, 401.

chemical constitution of, sex in relation to, in man, A., III, 19.

choline-esterase in, A., III, 460.

determination in, of phosphatides conductometric and electrometric titration,

development and vitality of, in man, A., III, 569.

electrolyte, nitrogen, and water concentration in, A., III, 724.

excised, glycolysis and respiration in, effect of iodoacetate on, in rats, A., III, 22

fluid content of, after trauma, A., III, 331. fore-, basal areas of, in relation to electro-corticogram, A., III, 644.

electrical activity of areas of, A., III, 402. frontal lobes of, area 13 of orbital surface of, in relation to hyperactivity and hyperphagia in monkeys, A., III, 180.

gaseous exchange of, effect of neosynephrin on, A., III, 22.

in relation to constitution in man, A., III, 23. injury to, after sulphathiazole administration, A., III, 55.

lipins of, in rats deprived of tocopherol, A., III, 49.

mink's, non-tectal portions of, nuclear pattern

of, A., III, 21. occipital lobe of, fissural pattern in, in negroes

and whites, A., III, 449. opossum's, non-tectal portions of, nuclear

pattern of, A., III, 21 perivascular spaces of, in mammals, A., III,

primates', non-tectal portions of, nuclear

pattern of, A., III, 21. pyruvic acid metabolism in, A., III, 50.

rabies-infected, virulence of, effect of autolysis and proteolysis on, A., III, 621.

respiration of, inhibition of, by picrotoxin, A., III, 331.

rodents', non-tectal portions of, nuclear pattern of, A., III, 21. sensory areas of, A., III, 331.

sphingomyelin from, preparation of, A., III,

stem, lateral spinothalamic tract location in, in man, A., III, 724. lesions of, homolateral reflex exaggeration

after, A., III, 20.

tectum of, in mammals and reptiles, A., III,

tissues, grinding of, apparatus for, C., 193. phosphatide in, specific reaction of, A., III, 789.

Brain, ungulates', non-tectal portions of, nuclear pattern of, A., III, 21.

visual radiation of, central foveæ horizontal meridians in, in man, A., III, 25. wounds of, gunshot, etc., physiological effects of, A., III, 402.

healing process in, A., III, 102.

Brain diseases, cysts, in third ventriele, A., III, 23.

hypertensive, A., III, 103. tumours, A., III, 477, 664.

induced by benzpyrene, A., III, 263.

Bran, use of, in treatment of constipation, A., III, 412.

Brass, analysis of, by vacuum-distillation, C., 58. determination in, of sulphur, C, 160.

of tin, volumetrically, C., 109. of zinc, spectrochemically, C., 6.

molten, determination of gas content of, C.,

plating solutions for, analysis of, C., 106. determination in, of zinc, C., 155.

silicon, determination in, of lead, silicon, and zinc, C., 62.

sorting of, with steeloscope, C., 16.

α-Brass, crystals, internal friction of, A., I, 243. X-ray diffraction by, A., I, 30.

Brassica, boron deficiency in, A., III, 379.
seeds of, goitrogenic action of, effect of
di-iodotyrosine and thyroxine on, A., III, 185.

Brassica alba, growth of, effect of vitamin- B_1 on, A, III, 231.

Braunite, boron in, A., I, 259. crystal structure of, A., I, 72.

Bravoite, A., I, 260. Bread, A., III, 197.

calcium in, metabolism of, A., III, 546. detection in, of bromates, C., 179. determination in, of thiamin, C., 129.

enriched, iron availability in, A., III, 266. making of, use of potassium bromate in, C., 80. standard, composition of, and its fortification

with calcium, A., III, 123. wheat germ, vitamin-B1 content of, A., III, 45.

white and whole wheat, digestion of, in human stomach, A., III, 265.

nutritive value of, A., III, 351. whole wheat, effect of inositol and panto-thenic acid addition to, on absorption,

digestion, and evacuation, A., III, 270. Breast, abscess of, treatment of, with penicillin,

A., III, 678. arterial blood supply of, A., III, 445.

cancer of. See under Glands, mammary. cystic disease of, A., III, 599.

engorgement of, post-partum, prevention of, with cestrogens, A., III, 410.

feeding with, initiation of, importance of rest in, A., III, 113.

puerperal engorgement of, effect of stilb-estrol on, A., III, 655.

tissues, lesions of, benign and malignant, differentiated with ultra-violet light, A., III, 668.

See also Glands, mammary.

Breathing. See Respiration.

Brewing materials, determination in, of aneurin and riboflavin, C., 128.

of dextrin and reducing sugars, C., 178. Bricks, measurement of bond between, and mortar, C., 114.

Bright's disease, A., III, 37.
canine, tubular epithelium of, cytology of, A., III, 257.

Brines, carboniferous, Polasna-Krasnokamsk anticline, A., I, 184.

Bromates. See under Bromine. Bromides. See under Bromine.

Bromidism, after prostigmine bromide for

myasthenia gravis, A., III, 214. Bromine, electrons from, counting of, A., I,

210. electron affinity of, and its decomposition on hot tungsten, A., I, 262.

equilibrium of, with boron tribromide, A., I, 203.

Bromine, isomeric transition of, coefficients of internal conversion in, A., I, 189.

rays emitted by, A., I, 210. spectrum of, A., I, 209. spark, A., I, 185.

Bromides, determination of, in presence of chlorides, C., 111. poisoning due to. See under Poisoning.

Bromates, detection of, in bread, C., 179. determination of, in presence of copper, iodometrically, C., 111.

Bromine determination: determination of, C., 19.

active, C., 69. in blood and tissues, C., 126.

in water, C., 138. a-Bromo-aldehydes, synthesis of, and their derivatives, A., II, 360.

a-Bromo-β-amino-ketones, reactions of, with

heterocyclic sec.-amines, A., II, 171. Bromoprene, addition of bromine to, A., II, 149.

Bronchi, epithelium of. See under Epithelium. Bronchiectasis, chronic, Hamophilus influenza in, A., III, 148.

radiology and surgery of, A., III, 579.

Bronchography, in unresolved pneumonia cases, A., III, 722.

Bronchospasm, associatembolism, A., III, 722. associated with pulmonary

Bronze, analysis of, spectroscopic, C., 58. determination in, of nickel, C., 163. of sulphur, C., 160. of tin, volumetrically, C., 109. sorting of, with steeloscope, C., 16.

Brookite, Parisian Basin, A., I, 208. Broom, common. See Cytisus scoparius. Spanish. See Spartium junceum.

Brucella, culture of, from blood, A., III, 298. effect on, of penicillin and of penicillin with sulphathiazole, A., III, 843. growth of, A., III, 73.

Brucella abortus, isolated from orchitis in bull, A., III, 617.

Brucellosis, acute, A., III, 73. bacteriology of, in dogs and swine, A., III,

298. epidemic, milk-borne, A., III, 73.

Brucinetetra-azidocopper, A., I, 290. Brucite, in limestone at Wilkinson, Ontario, A., I, 257.

Wakefield, Quebec, A., I, 134. Buchu. See Barosma.

Buckwheat, photosensitising isolation of, A., III, 137. agents from.

Buerger's disease, medico-legal problems of, A., III, 215.

Buffer solutions, phosphate, pH of, effect of metal ammine salts on, A., I, 176.

Bufo, meninges of, histology of, A., III, 520. Bufo bufo bufo, venom of, dried, peripheral vaso-constrictive action of, A., III, 556.

Bufo vulgaris, ovarian follicles of, non-sensitivity of, to action of luteinising hormone, A., III, 812.

Bulimia, hypothalamic, A., III, 179.

Buphthalmos, uphthalmos, bilateral, with congenital anomalies of iris and subluxated lens, A., III, 104.

Burettes, automatic, C., 51. Bailey, modified, C., 205.

micro-, screw-controlled, C., 145.

Burns, capillary permeability in, studied with radioactive dyes in blood and lymph, A., III, 526.

carbohydrate metabolism after, A., III, 826. cutaneous, blood changes in, A., III, 395.

dressing for, human fibrin as, A., III, 10. electrophoretic pattern in lymph and serum

in, A., III, 9. experimental, A., III, 283.

hæmoconcentration of, effect of gelatin-glucose-salts solution on, A., III, 576.

hæmoconcentration and mortality rate in, effect of plaster bandages and local cooling on, A., III, 243. heat, A., III, 38.

heat and mustard gas, A., III, 685. in children, A., III, 283.

A & C---G*

```
Burns, phosphorus, treatment of, A., III, 38, 610.
  shock from, capillary permeability in, studied
      with radioactive dyes in blood and
      lymph, A., III, 526.
```

liver principle effective against, A., III, 173. treatment of, with hypodermoclysis of physiological saline, A., III, 721.

with serum, A., III, 173. skin lesions in, and their relation to systemic manifestations, A., III, 721.

subcutaneous temperature in, A., III, 817. surfaces of, sulphanilamide absorption from, A., III, 55.

syndrome of, in relation to crush syndrome, A., III, 17.

treatment of, A., III, 173, 282. by closed-plaster method, A., III, 62. casein in, A., III, 557. cellophane for, A., III, 685. effect of substances on, A., III, 685. enzymic debridement in, A., III, 117. protein replacement and, A., III, 524. surface, use of fibrinogen and thrombin in, A., III, 795.

with paraffin, A., III, 215. war, treatment of, A., III, 363.

Burner for microchemical work, C., 145. Bursæ, human trabeculæ traversing, A., III,

sarcomas of, synovial, A., III, 417.

Bursa infracardiaca, pleuro-peritoneal membrane and, A., III, 385.

Bursaria truncatella, respiration of, effect of cyanide and hunger on, A., III, 289.

Butadiene, addition to, of 5- and 6-carbomethoxy-1:4-toluquinones, A., II, 139. density of, A., I, 101; C., 70.

physical constants of, A., I, 31.

reaction of, with benzene, in presence of sulphuric acid and hydrogen fluoride catalysts, A., II, 293.

Butadiene, a\beta-dichloro-, reaction of, with hypobromous acid and alkyl hypoiodites, A., II, 149.

Δ^{αγ}-Butadiene, $a\beta$ -dibromo-, synthesis and properties of, A., II, 149.

Butaldehyde, y-chloro-, and its 2:4-dinitrophenylhydrazone and oxime, A., II, 151.

γ-hydroxy-, 2:4-dinitrophenylhydrazone and oxime of, A., II, 151.

ω-hydroxy-, derivatives of, A., II, 151. isoButaldehyde, and a-bromo-, and their derivatives, A., II, 360.

condensation of, with aliphatic ketones, A., II, 247.

reactions of, with its aldol, A., II, 4.

Butanal. See Butaldehyde.

n-Butane, azeotrope of, with methyl bromide, A., 1, 203.

equilibrium of, with water, A., I, 177. isomerisation of, catalytic, A., I, 108. pressure-volume curves of, A., I, 177.

surface tension of, saturated with nitrogen, A., I, 58.

n-Butane, β-p-diamino-y-hydroxy-, a-nitro-β-paminohydroxy-, and γ-nitro-β-p-nitrohydroxy-, benzoyl derivatives, A., II, 317.

isoButane, determination of, in mixtures with n-butane, (P.), C., 69.

n- and iso-Butanes, analysis of mixtures of, by density method, C., 165.

cycloButane, 1:2-diamino-, and its derivatives, synthesis of, A., II, 294. Bntane-αδ-diol, βy-diamino-, derivatives of,

A., II, 143. Butane-\(\beta\)y-diol, isomerides of, produced by

fermentation, A., III, 696.

hygroscopicity, Butane- $\beta\gamma$ -diols, mixed, viscosity, and properties in boric acid solution of, A., I, 198.

stercoisomeric, fermentation of, A., III, 771. isoButanetriol-β-d-glucoside, β-nitro-, tetra-See isoButylglycerol-β-dacetate of. glucoside, nitro-, tetraacetate.

Butan-8-ol, a- and y-nitro-, a-naphthylurethanes of, A., II, 247.

n-Butanol- β -d-glucoside, δ -nitro-, tetraacetate, A., II, 251.

Butenyl chlorides, hydrolysis of, A., I, 157. halides, reaction of, with cuprous cyanide, allylic rearrangement in, A., II, 250. Buthus tamulus, anatomy and morphology of,

A., III, 517. Butisol sodium, pharmacology and toxicity of,

A., III, 834. Butæstrol, æstrogenic activity of, A., III, 810. β -n-Butoxyethyl p-toluenesulphonate, A., II,

p-d-sec.-Butoxymethylacetophenone, and 2:4-dinitrophenylhydrazone, A., II, 218.

p-sec.-Butoxymethylbenzoic acid, A., II, 218. a-p-d-sec.-Butoxymethylphenylethyl alcohol, A., II, 218.

6-Butoxy-2:4:5-trimethylbenzyl

3-hydroxy-, A., II, 200. Butter, antirachitic potency of, effect of sunlight on, A., III, 272.

Wisconsin, determination in, of carotene and vitamin-A, C., 80.

Butter fat, determination in, of carotenoids and vitamin-A, C., 133, 182.

dried, determination in, of water, C., 31. growth-promoting value of, A., III, 750. value of, compared with oleomargarines and vegetable oils, A., III, 419.

See also Ghee.

Butterflies. See Colias chrysotheme.

n-Butyl alcohol, oxidation of, electrochemically, A., I, 289.

n-Butyl alcohol, β -amino-, benzoyl derivative, A., II, 249.

tert.-Butyl alcohol, use of, in bacteriologic

staining, A., III, 238.

tert.-Butyl chloride, condensation of, with

m-cresol, A., II, 367. reaction of, with phenols, A., II, 256.

hydrogen peroxide, effect of, on frog's heart, A., III, 759.

sec.-Butylamine, dithiocarbamate, A., II, 37. 5-Butylaminoacridine hydrochloride, A., II, 82. $8-\gamma-n$ -Butylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

8-n-Butyl- γ -aminopropylamino-6-methoxyquinoline, 8-8'-amino-, and its salts, A., II,

8-y-isoButylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

8-y-tert.-Butylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57. n-Butylisoamylamine hydrochloride, A., II,

3'-n-and -: so-Butyl-1'-azobenzenesulphonamides, 4'-hydroxy-, A., II, 257.

180 Butylbenzene, amino-, acetyl and benzoyl derivatives of, A., II, 127.

diamino-, NN'-diacetyl derivative of, A., II,

p-tert.-Butylbenzene, m-bromo-, A., II, 329. p-a-Butylbenzenesulphonxanthylamide, A., II, 156.

p-γ-Butylbenzoic acid, ethyl ester, A., II, 328. l-p-sec.-Butylbenzoic acid, and its derivatives, A., II, 15.

dl-p-sec.-Butylbenzonitrile, A., II, 15. 2-n-Butylbenzoxazole, A., II, 174.

l-p-sec.-Butylbenzoyl peroxide, A., II, 15. N-p-sec.-Butylbenzylethylenediamine, A., II, 366.

1:4-n-Bntyl-180-, -aec.-, and -tert.-butylbenzenes, A., II, 10.

1:4-sec.-Butyl-tso- and -tert.-butylbenzenes, A.,

II, 10. 1:4-180Butyl-tert.-butylbenzenes, A., II, 10. Butyl-n- and iso-butyrophenones, A., II, 10.

N-tert.-Butylcarbamide, A., II, 92. 3-n-Butylcoumarin, 4-hydroxy-, A., II, 166. 5-tert.-Butyl-m-cresol, A., II, 367.

5-tert.-Butyldiphenyl-2:3-dicarboxylic acid. See 5-tert.-Butyl-3-phenylphthalic acid.

Butylene, catalytic dehydrogenation butadiene, at reduced pressure, A., II, 117.

co-polymerisation of, with acetylene, in electric discharge, A., II, 357.

isoButylene. See dy Butylene. $\Delta\beta$ -Butylene, $\alpha\beta\delta$ -tribromo-, A., II, 149. Δ^{γ} -Butylene, copolymers of, isoprone and, structure of, A., II, 177.

cyclic dimerisation and thermal polymerisation of, A., II, 357.

polymerisation of, on hydrated silicate catalysts, A., I, 180.

a-Butylene glycol, diacetate and di-a-naphthylurethane, A., II, 245.

 β_{γ} -Butylene glycol, determination of, in presence of invert sugar, C., 21.

βy-Butylene glycols, configuration of, A., II, 285. Δ^{α} -Butylene- $\alpha\delta$ -diol, aβ-dichloro-, and

diacetate, A., II, 149. Δ^{α} -Butylene- γ -ol, $\alpha\beta$ -dichloro- δ -bromo-, and its

acetate, A., II, 149. 3-tert.-Butyl-9-fluorenone-1-carboxylic acid, A.,

II, 17.

5-Butylfuran-3-carboxylic-2-acetic acid, 5-tetrahydroxy-, diethyl ester, A., II, 53. isoButylglycerol, A., II, 374.

isoButylglycerol-β-d-glucoside, acetate, A., II, 251. nitro-. tetra-

n-Butylcyclohexane, A., II, 40. cis-1-Butylcyclohexanol, 2-chloro-, A., II, 335. a-tert.-Butylhomophthalic acid, and anhydride, A., II, 17.

3-tert.-Butyl-1-hydrindone, and its oxime, A., II,

n-Butylhydroxylamine platinichloride, A., II, 90. 3:3'-Butylidenebis-4-hydroxycoumarin diacetate, and dibenzoate, A., II, 344.

3:3'-nand-iso-Butylidenebis-4-hydroxycoumarins, and their dimethyl others, A., II, 166.

n-Butylidene-ethylamine, A., II, 183.

n-Butylidenecyclohexylamine, A., II, 183.

n-Butylidenersopropylamine, A., II, 183.

n-Butylmalonic acid, δ-cyano-, and its diethyl ester, A., II, 305.

4-tert.-Butylmorpholine, hydrochloride, A., II, 323. 4-ββ'β''-trihydroxy-,

2-Butylnaphthalene, 1:3-dihydroxy-, and its diacetate, A., II, 130.

2-isoButylnaphthalene, 1:3-dihydroxy-, and its diacetate, A., II, 130.

tert.-Butylnaphthalenes, A., II, 124.

 μ -n-Butyl- μ -n-nonylbutyric acid, and its methyl ester and amide, A., II, 180.

β-n-Butyl-β-n-nonylbutyric acid, a-cyano-, ethyl ester, A., II, 180.

 β -n-Butyl- β -n-nonylbutyronitrile, A., II, 180. 1-n-Butylcyclopentanol, p-nitro- and 3:5-dinitrobenzoates, A., II, 219.

5-tert.-Butyl-3-phenylphthalic acid, and its derivatives, A., II, 17.

sec.-Butylphthalamic acid, A., II, 37.

sec.-Butylisophthalamic acid, A., II, 37.

sec.-Butylphthalimide, A., II, 37.

5-Butylpyrazole-3-carboxylic acid, A., II, 380. 4-tert.-Butylpyrocatechol diphenylmethylene ether, A., II, 346.

3-Butylquinoline, 3-D-arabotetrahydroxy-, A., II, 35.

4:4'-dihydroxy-, dimethyl a-n-Butylstilbene, ether, A., II, 128.

5-tert.-Butyl-1:2:3:4-tetrahydrodiphenyl-2:3dicarboxylic acid, and its anhydride, A., II, 17.

Butyraldehyde. See Butaldehyde. Butyramide, y-chloro-, A., II, 151.

Butyribacterium rettgeri, fermentation of, A., III, 696.

Butyric acid, carboxy-labelled, rôle of, in liverglycogen production, A., III, 130. 4-diphenylyl ester, A., II, 44.

esters, oxidation of, by liver enzymes, A., III,

metabolism of. See under Metabolism. production of, in alimentary canal, A., III, 539.

tetrahydrofurfuryl ester, effect of, on plant growth, A., III, 87.

n-Butyric acid, a-amino-, as constituent of proteins, A., II, 383.

 β -amino-, and its hydrochloride, A., II, 324. a-hydroxy-, configurative relation of, to r-lactic acid, A., II, 32.

y-hydroxy-, silver salt, A., II, 151.

isoButyric acid, 2:6-dichloro-1-phenyl ester, A., II, 128. 4-diphenylyl and phenyl esters of, A., II, 217. xylyl ester, A., II, 128. 180 Butyric acid, trihydroxy-, and its derivatives,

A., II, 321. n- and iso-Butyric acids, a-amino-, A., II, 249. isoButyrmethylamide, a-hydroxy-, A., II, 382. 180Butyrophenone, 3:5-dichloro-4-hydroxy-, A., II, 128.

4-n-Butyryl-1-p-nitrophenyl-5-methylpyrazole-3carboxylic acid, ethyl ester, A., II, 236.

4-Butyryl-1-p-nitrophenyl-5-propylpyrazole-3carboxylie acid, ethyl ester, A., II, 236.

O-n- and -iso-Butyrylsalicylic acids, methyl esters, A., II, 166.

N1-n-Butyrylsulphanilamide, A., II, 365. 4-N4'-Butyrylsulphanilamidobenzoic acid, A., II,

 $2-N^4-n$ -Butyrylsulphanilimido-1-methyl-1:2dihydropyridine, A., II, 26.

N⁴-n-Butyrylsulphanilylsulphanilamide, A., II,

Byssinosis, A., III, 762.

CTAB, effect of, on cells in vitro, A., III, 59. Cabbages, oxidation-reduction potential of tissue fluids of, A., III, 377.

red, colouring matter of, as indicator, A., III, 856.

red and white, vitamin-C in, A., III, 443. Cabbage plants, hardiness of, in relation to bound, frozen, and unfrozen water, A., III, 307.

tetraploidy in, A., III, 313. Cacahuananche. See Licania arborea.

Cacao beans, determination in, of crude fibre, and in cacao products, C., 132. minced, autolysis of, A., III, 612.

wilt of, A., III, 623. Cadmates. See under Cadmium.

Cadmium, absorption by, of slow neutrons, A., I, 189.

crystals, magnetic susceptibility of, A., I, 217. isotopes, y-rays from energy of, A., I, 76. nuclear scattering cross-section for, A., I, 263. plating baths for, determination in, of cyanide, C., 158.

poisoning by. See under Poisoning. polarography of, effect of electrolyte on, A., I. 251.

refrigerators plated with, illness caused by, A., III, 61.

spectrum of, spark, A., I, 93.

wave length of red line in, A., I, 1.

Cadmium bases (cadmiumammines), instability constants of, A., I, 127.

Cadmium compounds, in organisms, A., III, 118. Cadmium bromide, solubility of, in water, A., I,

chloride, solubility of, in water, A., I, 35. halides, darkening of, by ultra-violet light, A., I, 67.

electrostatic energy and Madelung constant for, A., I, 239.

hydride, spectrum of, in cadmium-sensitised

hydrocarbons, A., I, 95. hydroxide, action of alkalis on, A., I, 22.

hydroxyfluorides, A., I, 90.

sulphide, photo-adsorption effects with, A., I, 199.

precipitation of, with mercuric sulphide, A., I, 67.

Cadmates, A., I, 22.

Cadmium organic compounds :-

Cadmium mercurithiocyanate, crystal structure of, A., I, 221.

Cadmium detection, determination, and separation :-

detection and determination of, C., 107. determination in, of zinc, C., 60.

determination of, in biological materials, C., 190.

in organisms, C., 42,

Cadmium detection, determination, and separation :-

determination of, in potassium cyanide solutions, polarographically, C., 158. in presence of cobalt, copper, nickel, and zinc, C., 154.

in zine alloys, polarographically, C., 57. determination and separation of, in cadmium

and copper quinaldinates, C., 154. Cæcectomy, effect of, and succinylsulphathiazole on rats fed vitamin-K-free diet, A., III, 392.

on vitamin-K synthesis in rat intestines, A., III, 425.

vitamin requirement of rats after, A., III,

Cœcitis, ulcerative, elimination of, in rat colony, by chemotherapy of mothers, A., III, 133. Cœcum, malignant lesions of, A., III, 264.

Caesalpinia digyna, tannin from, A., II, 327. Casium, films, with antimony, conductivity of,

A., I, 39. ions, photo-excitation by, in deuterium and

hydrogen, A., I, 73. position of, in active alkali cations, A., I,

radioactivity of, A., I, 234.

reaction of, with ethylene, A., II, 315.

Cæsium azidocuprate, A., I, 182. Cæsium determination :-

determination of, in minerals and solutions, C., 5.

Caffeine, determination of, in coffee extracts, C., 132.

in syrup glycerophosph., C., 185. effect of, on enzymic activity, A., III, 657. in coffee and tea, effect of, on respiratory metabolism, A., III, 604.

Cajedrol, as analgesic and antiseptic for genitourinary system, A., III, 834.

Calciferol, toxicity of, for chicks, A., III, 424. Calcification, ectopic, radiotherapy of, A., III, 686.

relation of, to vitamin-C, A., III, 517. Calcinosis, tumoral. See Tumours, calcified. Calcite, Chibiny tundras, A., I, 70.

crystallography of, from Lake Superior copper mines, A., I, 257.

distinction of, from dolomite, staining tests for, A., I, 257.

Calcium, structure of, A., I, 79.

Calcium alloys with gallium, crystal structure of, A., I, 239.

Calcium compounds, absorption of, in breast-fed infants in relation to rickets, A., III, 675. increase of, by protein derivatives, A., III, 484.

availability of, in cereals, A., III, 197. balance of, effect of work on, in geldings, A., III, 274.

in pregnant women, A., III, 678. biochemical effects of sex hormones on, in

rats, A., III, 737. blood. See under Blood. bone-. See under Bones.

deficiency of, effect of, on pregnancy and lactation in rats, A., III, 266.

gastric lesions due to, in rats, A., III, 34. dietary allowances of, adequacy of, A., III, 485.

metabolism of. See under Metabolism.

of milk. See under Milk.

purification of, A., I, 45. requirement of, for children, A., III, 825. for laying pullets, A., III, 266.

retention of, effect of vitamin-D on, A., III,

treatment with, of rickets, A., III, 675. utilisation of, by rats on high-protein-low

calcium and high-carbohydrate-low calcium diets, A., III, 124.

with lithium, crystal structure of, A., I, 194. Calcium salts, protective effect of, in anæsthesia, A., III, 833.

Calcium aluminates, hydration of, A., I, 67. aluminosilicate, equilibrium of, with calcium silicate and sodium aluminosilicate, A., I, 128.

Calcium carbide, heat content of, A., I, 86.

carbonate, crystal structure of, and of its mixtures with strontium carbonate, A., I, 230.

determination of, added to national flour,

dispersion of, in xylene, effect of surfaceactive agents on, A., I, 247.

efficacy of, in preventing rickets in rats, A., III, 128.

equilibrium of, with potassium carbonate and with silicates, A., I, 43. scale, determination of, deposited from

water, C., 107.

chloride, action of, and of calcium gluconate, on neuromuscular excitability, A., III, 800.

equilibrium of, with dioxan and water, A., I. 86.

heat content of, at high temperatures, A.,

viscosity of aqueous solutions of, A., I, 275. fluoride, determination of, in fluorspar, C., 56. hydrosilicates, formation of, A., I, 43.

hydroxide, determination of, in presence of calcium silicates, C., 5.

iodate, solubility of, in aqueous ammonia, A., I, 127.

nitrate, and its hydrate, heats of formation of, A., I, 226.

glasses containing, A., I, 86. heat content of, A., I, 219.

oxide (lime), basicity factor of, C., 107.

determination of, in cement, C., 163. in presence of calcium silicates, C., 5. with phenol, C., 59.

equilibrium of, with aluminium oxide and water, A., I, 203.

with bismuth sesquioxide, A., I, 37. with phosphorus pentoxide, A., I, 281. phosphate, efficacy of, in preventing rickets in

rats, A., III, 128. phosphates, reactions of, with

carbonates, C., 82. orthophosphate, equilibrium of, with calcium

orthosilicate, A., I, 154. silicate, equilibrium of, with calcium and

sodium aluminosilicates, A., I, 128. with sodium aluminium silicate and metasilicate, A., I, 250.

orthosilicate, solid solutions of, with strontium orthosilicate, A., I, 276.

Dicalcium silicate, solid solutions of, A., I, Calcium silicates, hydrated, crystal structure of,

A., I, 99. sulphide, heat of formation of, A., I, 203.

sulphite, specific heat of, A., I, 147.

Calcium detection and determination :--detection of, C., 6.

determination of, C., 5.

gasometrically, C., 125. in blood-serum, C., 77, 125, 174. in grape juice and wines, C., 129.

in magnesium and its alloys, C., 5. in milk, C., 30.

in organic materials, C., 147.

in silumin, spectrochemically, C., 61. vanadometrically, C., 6.

"Calcium-Sandoz", treatment with, of renal diseases, A., III, 37.

Calculi, renal, hypertension after removal of, A., III, 457. location of, at operation, A., III, 659.

sulphapyridine, treatment of, by ureteric catheterisation, anuria ducts, A., III, 56.

vesical, solution of, A., III, 597. Callinectes sapidus, zoea larvæ of, hatching,

moulting, and survival of, A., III, 818. Calorimeters, bomb, C., 48.

heat exchange between, and surroundings, C., 151.

spherical furnace, C., 48.

Calorimetry, A., I, 68.

a- and β-Calotropeols, and their acetates and benzoates, A., II, 110.

Calotropis gigantea, chemical composition of, A., II, 110.

3-Carbamylphenylarsonic acid, 4-hydroxy-, A.,

II, 242.

Calves, danger to, of flaking paint, A., III, 496. Calycanthus floridus, sterols of, A., II, 301. Calycotamine, and its hydrochloride, A., II, 355. Calycotomine, and its derivatives, A., II, 354. Calycotome spinosa, alkaloids of, A., II, 354. Cameras, for microradiography, C., 44. X-ray, C., 44. focussing, Scemann-Bohlin, measurements with, A., I, 269. spectrograph, Schmidt systems as, C., 147. 2-hydroxy-, apoCamphanealdehyde, 2-acetyl derivative, semicarbazone, A., II, 107. apoCamphanecarboxylic acid, 2-hydroxy-, 2-acetyl derivative, amide and chloride of, A., II, 107. tsoCamphanols, p-nitrobenzoates, A., II, 107. Camphene, hydration of, to isoborneol, A., II, 231. Camphene, ω-nitro-, A., II, 107. Camphor, cryoscopic constant of, A., I, 198. determination of, in spirit of camphor, C., 137. molal depression constant for, A., I, 33. production of, from pinene, A., II, 302. reaction of, with selenium dioxide, A., II, 343. sulphonation of, A., II, 52. transition from, to homocamphor, A., II, 268. Camphorquinone, rearrangement of, A., II, 107. 4-Camphorylsemicarbazide, and its derivatives, A., II, 232. 4-Camphorylthiosemicarbazide, and its derivatives, A., II, 232. 1-apoCamphyl, non-coplanar, A., II, 165. Canavalin, bactericidal action of, A., III, 844. Cancer, A., III, 664, 749. activities and organisation in relation to, in U.S.A., A., III, 599. adrenal cortex. See under Adrenal cortex. alimentary tract. See under Alimentary bile-duct. See under Bile duct. biocatalysts in tissue of, A., III, 195. blood proteose and, A., III, 599. Brown-Pearce, immunity to, abrogation of, A., III, 479. causes of, A., III, 196. cells, glycolytic and respiratory metabolism of, A., III, 819. structure of, and protoplasm asymmetry, A., III, 121. cervical, diagnosis of, histological, A., III, 417. cervical lymph node metastasis as first symptom of, A., III, 599. chemistry and, A., III, 196. choroid. See under Choroid. chronic disease and, A., III, 481. colloids in, protective, A., III, 820. colon. See under Intestines, large. conditions prior to, experiments on, A., III, constitutional factors of, in rat parabiosis, A., III, 121. control of, A., III, 417. development of, A., III, 746. chemical, bladder tumours and, A., III, with ultra-violet radiation, A., III, 262, 478. diagnosis of, histological, A., III, 417. use of B. proteus OX19 agglutination in. A., III, 598. duodenal. See under Duodenum. effect on, of avidin and egg white concentrates, A., III, 271. of heptanal sodium bisulphite methyl salicylate and 2:4:6-trimethylpyridine in tissue culture, A., III, 747. enzyme deficiency in, A., III, 263. epidemiology of, A., III, 821. fluorescence studies on, A., III, 748. gastric. See under Stomach. gastro-intestinal. See under Gastro-intestinal tract. growth of, effect on, of 11-dehydro-17hydroxycorticosterone, in mice, A., III, 820.of stilbostrol and steroids, A., III, 664. human, transplantation of, heterologous, A.,

III, 747.

Cancer, in congenital cysts of liver, A., III, 122. 4-Carbamylphenylarsonic acid, 3-nitro-, A., II, in rats injected with crude ether-extracted wheat-germ oil, A., III, 350. β -o-Carbamylphenylpropionic acid, A., II, 78. inheritance of, A., III, 665. Carbarsone, inhibition of coprosterol formation lip. See under Lips. by, A., III, 130. multiple, A., III, 820. treatment with, of Bacillus coli infections, A., nasopharynx, A., III, 600. III, 209. oral, in Bombay, A., III, 668. Carbazine series, syntheses in, A., II, 276. Carbazole, 9-amino-, picrate, A., II, 83. tetrachloro-, A., II, 365. pain in, intractable, treatment of, with cobra venom, A., III, 834. production of, in vitro, A., III, 261, 598. thio-derivatives of, A., II, 235. racial distribution of, A., III, 668. 4-Carbethoxyamino-2-thienylvaleric acid. rectal. See under Rectum. 3-amino-, benzoyl derivative, A., II, 354. respiratory tract. See under Respiratory N-Carbethoxy-N'-benzylcarbamide, A., II, 365. -)-a-Carbethoxybenzyloxyphosphorus. tract. squamous-cell, spread of, and reaction to dichloride, A., II, 150. wound-healing stimulus in man, A., III, a-Carbethoxy-y-benzylthiol-a8-dimethyl-nbutyric acid, and its ethyl ester, A., II, 182. susceptibility to, malignant tumours and, A., a-Carbethoxy-y-benzylthiol-\(\beta\)-methyl-n-butyric III, 820. acid, ethyl ester, A., II, 182. test for, sedimentation rate maintenance as, β-Carbethoxy-n-butyric acid, γ-cyano-, ethyl ester, A., II, 169. A., III, 123. tissue of, biocatalysts in, A., III, 119. 7-Carbethoxycinnolme-3-acetic acid, 4-hydroxy-, treatment of, improved, A., III, 667. 3-ethyl ester, A., II, 23. with aldehyde bisulphites, A., III, 667. 5-Carbethoxy-4:6-dimethylcumalin, 3-amino-. with avidin, A., III, 821. and its derivatives, A., II, 179. vulva. See under Vulva. δ -Carbethoxy- $\alpha\beta$ -dimethyl- $\Delta\gamma$ -pentenoic acid. β -hydroxy-, ethyl ester, A., II, 147. Cancer Congress, Guadalaraja, Mexico, A., HI, O-Carbethoxy-2:6-dimethylphenol-4-sulphonic 668. Candida albicans, morphology and physiology acid, sodium salt, A., II, 271. of, A., III, 769. O-Carbethoxy-2:6-dimethylphenol-4-sulphonyl Candida guilliermondia, vitamin-B, formation chloride, A., II, 271. by, A., III, 293. 2-Carbethoxydiphenylamine, A., II, 314, Candles, Berkefeld, N-Carbethoxy-N'-ethoxymethylcarbamide, for plasma filtration, enzymic cleaning of, A., III, 454. II. 365. Cannizzaro reactions, crossed, A., II, 375. β -Carbethoxyethylbenzoylpropionic acid, A., II, Canteens, industrial, A., III, 482. 298. school, A., III, 483. β -Carbethoxyethyl- ϵ -cyano- α -carbomethoxy-n-See also Catering. amyl sulphide, A., II, 305. Cantharidin, determination of, C., 36. β -Carbethoxyethyl- $\alpha\epsilon$ -dicarbethoxy-n-amyl poisoning by. See under Poisoning. sulphide, A., II, 305. synthesis of, A., II, 80, 376. 2-β-Carbethoxyethyl-Δ1-cyclohexene-1-Capaurine, pharmacology of, A., III, 762. cyanoacetic acid, ethyl ester, A., II, 17. Capillarity, C., 53. N-Carbethoxy-N'-a-ethylpropylcarbamide, pseudo-optics in, A., I, 58, 223; C., 197. Capillary systems. See under Systems. II, 365. a-Carbethoxy-a-cyclohexyl- $\delta\theta$ -dimethyl- $\Delta\gamma\eta$ -n-Capillary tubes, rise of water in, A., I, 278. decadienoic acid, ethyl ester, A., II, 99. a-Carbethoxy-8-3-indolylpropionic acid, Capromys nana, female, external characters of, ethyl A., III, 625. ester, A., II, 235. Capsanthin, stereoisomerides, spectroscopy of, α -Carbethoxy- β -3-indolylpropionie acid, A., II, 223. a-amino-, ethyl ester, derivatives of, A., II, Caramel, determination of, in roasted coffee, 274. C., 180. p-Carbethoxymethanesulphonylphenylarsonic 5- and 6-Carbalkoxy-1:4-toluquinones, preparacid, A., II, 283. ation of, A., II, 139. a-Carbethoxy-β-methoxymethyl-n-butyric acid, Carbamic acid, ethyl ester. See Urethane. y-cyano-, ethyl ester, A., II, 169. Carbamic acid, N-chloro-, esters, A., II, 364. 3-Carbethoxy-4-methylpyrrole-5-carboxylic acid, ethyl ester, sodium salt, A., II, 365. A., II, 351. NN-dichloro-, β-chloroethyl ester, A., II, 364. dland $l-1-\beta-2$ -Carbethoxy-3-methyl-1-Carbamide, morpholinomethyl derivatives of, A., II, 238. pyrrolidinopropionic acids, ethyl esters, picrates, A., II, 241. properties of, A., II, 71. 3-Carbethoxy-2-methylquinoline-7solubility in, of salts, A., I, 12. methenylacetoacetic acid, 6-amino-, and its Carbamides, aryl-substituted, alkylation and arylation of, A., II, 205. ethyl ester, and its picrate, A., II, 278. p-Carbethoxymethylthiolphenylarsonic acid, A., II, 283. Carbaminocholines, N-substituted, pharmacology of, A., III, 134. β-Carbethoxy-γ-2-naphthyl-cis- and -trans-Δβ-N-Carbamyl-dl-alanine, N'-chloroacetyl pentenoic acids, and their derivatives, A., II, N'-a-chloropropionyl derivatives of, A., II, 36. 4-Carbamyl-m-arsanilic acid, and its oxide, A., $a\hbox{-}\mathbf{Carbethoxy}\hbox{-} a\hbox{-} cyclopentyl\hbox{-} n\hbox{-} \mathbf{butyric}$ acid. II. 242. y-cyano-, ethyl ester, A., II, 306. 5-Carbamyl-m-arsanilic acid, 4-hydroxya-Carbethoxy-a-cyclopentylglutaric acid, diethyl its dichloroarsine hydrochloride, A., II, 243. ester, A., II, 306. a-Carbethoxy-β-phenyl-n-butyric acid, γ-cyano-, p-p'-Carbamylbenzenesulphonylphenylarsonic acid, A., II, 243. ethyl ester, A., II, 169. N-p-Carbamylbenzoylarsanilic acid, and its arsine oxide, A., II, 243. N-p-Carbethoxyphenyl-N'N'-dimethylsulphamide, A., II, 364. Carbamylcholine, effect of, on polycythæmia, A., 4-Carbethoxy-5-phenyl-2-piperidone, and β -forms of, A., II, 143. N-Garbamylglycine, N'-acyl and -halogenoacyl derivatives of, A., II, 36. a-4-Carbethoxy-1-phenyl-3-pyrazol-5-onyl-β-4carbethoxy-1-phenyl-2-methyl-3-pyrazolylbenzyl ester, and its N'-chloroacetyl derivethane, A., II, 211. ative, A., II, 36. a-4-Carbethoxy-1-phenyl-3-pyrazol-5-onyl- β -4-N-Carbamyl-l-leucine, N'-a-chloropropionyl cyano-1-phenyl-3-pyrazol-5-onylethane, derivative of, A., II, 36. II, 212. 1-Carbamylmorpholine, A., II, 239. α-(γ'-Carbethoxypropyl)-γ-butyrolactone, A., II,

N-Carbethoxy-N-3-pyridylcarbamide, A., II, 365.

- 1-Carbethoxy-1:2:5:6-tetrahydronicotinamide, A., II. 273.
- 1-Carbethoxy-1:2:5:6-tetrahydronicotinic A., II, 273.
- 4-Carbethoxythiophen-2-valeric acid, 3-amino-, and its derivatives, A., II, 354.
- O-Carbethoxy-2:3:6-trimethylphenol-4sulphonic acid, sodium salt, A., II, 271. O-Carbethoxy-2:3:6-trimethylphenol-4-
- sulphonyl chloride, A., II, 271. Carbides, hardness testing of, C., 55. N-Carbobenzyloxy-O-acetyltyrosine, methyl ester,
- A., II, 324. N-Carbobenzyloxy-O-acetyltyrosyl-O-acetyl-
- tyrosine, A., II, 324. N-Carbobenzyloxy-O-acetyltyrosyltyrosyl-
- tyrosine, ethyl ester, A., II, 324. N-Carbobenzyloxy-O-acetyltyrosyltyrosyl-
- tyrosyltyrosine, and its ethyl ester, A., II, 324. N-Carbobenzyloxyglycine, ethyl ester, A., II,
- Carbobenzyloxyglycyl-1-hydroxyproline, A., II,
- Carbobenzyloxyglycyl-1-hydroxyprolineamide, A., II, 290.
- Carbobenzyloxyglycyl-1-prolineamide, A., II, 290.
- Carbobenzyloxy-1-hydroxyproline hydrazide, A., II, 290.
- Carbobenzyloxy-1-hydroxyprolylglycine, benzyl ester, A., II, 290.
- Carbobenzyloxy-l-leucylhistamine, A., II, 83. Carbobenzyloxy-l-tyrosylhistamine, A., II, 83. N-Carbobenzyloxytyrosyltyrosine, ethyl ester, A., II, 324.
- hydrazide, A., II, 324.

324.

- N-Carbobenzyloxytyrosyltyrosyltyrosine, A., II, 324.
- N-Carbo- β -chloroethoxy-N'-a-ethylpropylcarbamide, A., II, 365.
- Carbocyanines, containing the peri-naphtha-l:3-thiazine nucleus, A., II, 26. Carbodibenzylimide, and its dimeride, A., II,
- 107.
- Carbodibornylimide, A., II, 106. Carbodi-imides, aliphatic, A., II, 184.
- optically active, A., II, 106. Carbodi-1-menthylimide, A., II, 106.
- Carbohydrases, classification of, A., III, 500.
 Carbohydrates, adsorption of, by activated carbon from solutions, A., I, 277.
 - characterisation of, A., II, 37.
 - complex, with blood-group specificity, A., III, determination of, in brewery worts, C., 128.
 - digestion of, in sheep, A., III, 33.
 - dynamic effect of, in relation to fat and protein, A., III, 676.
 - metabolism of. See under Metabolism. reactions of, interpreted in terms of consecutive electron displacement, A., II, 250.
 - reversibility of, in rats shocked by clamping, A., III, 677.
- stores of, in hypophysectomised rats, A., III, 591.
- l-o-Carbomenthoxybenzoyl peroxide, A., II, 15. $a-(\delta'-Carbomethoxy-n-amyl)-\gamma-butyrolactone,$ A., II, 70.
- N-Carbomethoxy-N'-benzylcarbamide, A., II, 365.
- N-Carbomethoxy-N'-ethoxymethylcarbamide, A., II; 365.
- N-Carbomethoxy-N'-a-ethylpropylcarbamide, A., II, 365.
- N-Carbomethoxyglycine, methyl ester, A., II, 5. 2-Carbomethoxy-6-hydroxy-2:5-dimethyldecahydro-2-naphthylacetic acid, A., II, 19.
- a-2-Carbomethoxy-6-hydroxy-2:5-dimethyl-1:2:3:4-tetrahydro-1-naphthylacetic acid, A., II, 19.
- a-2-Carbomethoxy-6-methoxy-2:5-dimethyl-1:2:3:4-tetrahydronaphthalene-1- β -propionic acid, methyl ester, A., II, 19.
- trans-2-Carbomethoxy-2-methylcyclohexane-1carboxylic acid, A., II, 48.
- 2-Carbomethoxy-2-methyl-s-octahydro-1phenanthrylacetic acid, a- and B-forms, A., II,

- 2-Carbomethoxy-2-methyl-s-octahydro-1phenanthrylacetic acid, 1-hydroxy-, methyl ester, A., II, 265.
- β-2-Carbomethoxy-2-methyl-s-octahydro-1phenanthrylpropionic acid, α - and β -forms, A., II, 266.
- β-2-Carbomethoxy-1-phenanthrylpropionic acid, methyl ester, A., IÎ, 137.
- 10-o-Carbomethoxyphenylphenthiazine, A., II, 314.
- β -2-Carbomethoxy-1:2:3:4-tetrahydro-1phenanthrylpropionic acid, methyl ester, A.,
- II, 137. 6-Carbomethoxy-1:4-toluquinones, and
- addition of, to butadiene, A., II, 139. Carbon, active, adsorption by, of carbohydrates from solutions, A., I, 277.
 - combustion of, A., I, 44.
 - deposition of, dendritic, A., I, 288.
 - dispersion of, in xylene, effect of surface-active agents on, A., I, 247. electrical and thermal conductivity of, A., I,
 - 274. isotopes, separation of, A., I, 22.
 - micro-crystalline, structure of, A., I, 145. oxidation of, A., I, 285.
 - X-ray diffusion structure of, A., I, 279.
 - reaction of, with oxygen and its ignition, A., I,
- with water vapour, A., I, 20. Carbon tetrachloride, entropy and heat capacity
 - of, A., I, 273. induction by, of hepatomas, A., III, 598. inhalation of, uramia after, A., III, 610.
 - liquid, breakdown of, A., I. . 166. liver damage by, A., III, 596.
 - poisoning by. See under Poisoning. use of, as solvent, health aspects of, A., III, 363.
 - volume of, mixed with benzene, A., I, 39. deuteride. See Deuterium carbide.
 - halides, redistribution reactions in, A., I, 228. monoxide, determination of, in blood, C., 76.
 - in fuel gas, apparatus for, C., 108. in gases, C., 63.
 - dissociation energy of, A., I, 2.
 - dissociation energy and spectrum of, A., I, 115.
 - exposure to, growth and reproduction during, A., III, 458.
 - oxidation of, by iodine pentoxide, determination of iodine liberated in, C., 64.
 - oxidation-reduction of water and, photochemically, A., I, 109. spectrum of, flame, A., I, 190.
 - dioxide, absorbent for, baralyme as, A., III, 799.
 - absorption technique of, "to and fro," nitrous oxide administration for, A., III, 495.
 - action of, on strychnine convulsions, A., III,
 - as expectorant, by inhalation, A., III, 176. determination of, gasometric apparatus for, C., 61.
 - in aerating powder, C., 129.
 - in ammonium carbonate solutions, C.,
 - in carbonates, by steam distillation, C., 8. in coal dust, C., 8, 61.
 - in milk, C., 31.
 - in solid fuel, C., 115. in water, C., 156.
 - respired by plant material, C., 189. equilibrium of, with methane, A., I, 154. excretion of, in vertebrates, A., III, 578. generator for, C., 205.
 - human respiratory quotients in relation to, after fructose, galactose, or glucose ingestion, A., III, 491.
 - liquid, solubility of water in, A., I, 82. poisoning by. See under Poisoning. pressure of, in alveolar and expired air, A., III, 578.
 - reaction of, with water, oxygen-carbon exchange in, A., I, 22.
 - solubility of, in aqueous salt solutions and in water, A., I, 37.

- Carbon, dioxide, specific heat of, A., I, 8, 55. value of, in counteracting low oxygen effects, A., III, 578.
 - disulphide, determination of, in atmosphere, photometer for, C., 46. pharmacology of, A., III, 214.
 - Carbonic acid, dissociation constant of, A., I, 37.
 - Carbonates, acid, detection of, in soap products, C., 108. structure and vibration of, A., I, 236.
 - acid and normal, spectra of, absorption infra-red, and structure, A., I, 117.
 - mineral, of Ussin-Tomsk watershed, A., I, structure and vibration of, A., I, 236.
 - Thiocarbonates, spectra of, absorption, infrared, and structure, A., I, 117. structure and vibration of, A., I, 236.
- Carbon determination :-
- determination of, by combustion, C., 195. apparatus for, C., 18, 19.
- in low-carbon steel, C., 156.
- in pyrites, C., 8. in steel, C., 8.
- Carbon filaments, reaction of, with oxygen at high temperatures, A., 1, 253. Carbon-hydrogen linkings, ionisation of, A., I,
- 16. Carbon linkings, hydrolytic rupture of, A., II,
- 189.
- Carbon rings, A., II, 137, 158, 252. Carbonates. See under Carbon.
- Carbonate-apatite, isomorphic substitutions in, A., I, 295.
- Carbonic anhydrase, A., III, 847.
 - determination of, in human autopsy tissue, C., 87.
 - in mammalian tissues, A., III, 364. kinetics of, A., III, 286.
- Carbonyls, metallic, A., I, 159, 183.
- history of, A., I, 180. Carbonyl compounds, identification of, by
- carboxyphenylhydrazones, A., II, 33. ionisation of, A., I, 16.
 polarography of, A., I, 226.
 reaction of, with Grignard reagents, A., II,

 - 316. αβ-unsaturated, catalytic hydrogenation of, A., II, 225.
 - compounds, o-hydroxy-, fluorescence reactions of, with boric acid, C., 116, 168.
- sulphide, dispersion and refraction of, A., I, 237.
- spectrum of, Raman, A., I, 192.
- Carbonyl groups, detection of, colour test for, C., 165.
- reduction of, by thioacetal hydrogenolysis, A., II, 322.
- Carbonylhæmoglobin, adult and fœtal, electrophoretic mobilities and sedimentation constants of, A., III, 574.
- solubility of, in cows, A., III, 574. determination of, in blood, spectrophoto-
- metrically, C., 125. Carborundum, anisotropy a susceptibility of, A., I, 217. morphology of, A., I, 134. and magnetic
- rectifying property of, A., I, 97.
- Carbothialdines, constitution of, and preparation of their homologues, A., II, 206. Carboxonium salts, A., II, 246.
- 4-ω-Carboxyalkylthiazoles, 2-amino-, reaction of, with acetylsulphanilyl chloride, A., II, 313.
- a-o-Carboxyanilinodiphenylacetic acid, A., II, 77. 4-p-Carboxyanilinopyrimidine, 2-amino-, and its diethylaminoethyl ester, trihydrochloride, and
- its sodium salt, A., II, 349. 2-4'-Carboxybenzeneazo-1-naphthol-4-sulphonic acid, 2-2':6'-diiodo-, disodium salt,
- A., II, 331. 2-4'-Carboxybenzeneazo-1-naphthylamine-4:8-disulphonic acid, 2-2':6'-diiodo-, trisodium salt, A., II, 331.
- 2-4'-Carboxybenzeneazo-1-naphthylamine-4sulphonic acid, 2-2':6'-diiodo-, disodium salt, A., II, 331.

2-m-Carboxybenzeneazocyclopentanone-2carboxylic acid, ethyl ester, hydrazone, A., II,

o-Carboxybenzoylperylene-A2, A., II, 104. 2-o-Carboxybenzoyl-1:2:3:4-tetrahydrophthalazine, and its sodium salt, A., II, 84. 2-δ-Carboxy-n-butylthiophen, 3:4-dihydroxy-, A., II, 305.

8-w-Carboxydecylamino-6-methoxyquinoline, and its amide and ethyl ester, A., II, 57. 2-Carboxy-2-devinylpurpurin-3, dimethyl ester,

A., II, 311. β -2-Carboxy-3:4-dihydro-1-phenanthryl-

propionic acid, A., II, 137.

2-Carboxy-4:6-dimethoxy-1-naphthylacetic acid, A., II, 18.

2-Carboxydiphenyl-2'-carboxyhydrazide, 4-nitro-, A., II, 135.

β-Carboxyethylbenzoylpropionic acid, A., II, 298. β -Carboxyethyl- $\alpha \in$ -dicarbethoxy-n-amyl

sulphide, A., II, 353. γ-Carboxy-γ-ethyl-n-hexonitrile, A., II, 185. γ - β' -Carboxyethylpentane- $a\epsilon$ -dicarboxylic acid,

and its triethyl ester, A., II, 33. Carboxyhæmoglobm, anoxæmic effect of, A., III,

η-Carboxy-46-heptenal, δ-chloro-, A., II, 154. a-2-Carboxy-6-hydroxy-2:5-dimethyl-1:2:3:4tetrahydro-1-naphthylacetic acid. methyl esters, A., II, 19.

 α -Carboxy- β -indolylpropionic acid, α-amino-, derivatives of, A., II, 274.

 α -Carboxy- β -3-indolylpropionic acid, and its diamide, A., II, 235.

1-Carboxylamido-5(3)-butylpyrazole-3(5)carboxylic acid, A., II, 380.

5-Carboxylamido-2-methylpyridme-3carboxylic acid, 4-hydroxy-, ethyl ester, A., II, 201.

o-Carboxylamidophenylcarbamide, A., II, 234. arboxylase, composition, resynthesis of, A., III, 64. splitting, and Carboxylase.

p-Carboxymethanesulphonylphenylarsonic acid, A., II, 283.

2-Carboxy-6-methoxy-2:5-dimethyl-1:2:3:4tetrahydro-1-naphthylacetic acid, and its esters, A., II, 18.

 β -2-Carboxy-5-methoxyphenylpropionic acid, A., II, 226, 295.

y-2-Carboxy-7-methoxy-1:2:3:4-tetrahydro-1phenanthryl-n-butyric acid, and its dimethyl ester, II, 137.

9-Carboxymethylamino-2-methoxyacridine, 6-chloro-, A., II, 83.

3:3'-Carboxymethylenebis-4-hydroxycoumarin, and its dimethyl ether, methyl ester of, A., II, 166.

β-2-Carboxymethylenecyclohexylacrylic acid, A., II, 195.

1-Carboxymethylene-6-methoxy-2:5-dimethyl-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, derivatives of, A., II, 18.

2-Carboxy-2-methyl-46-cyclohexenylacetic acid, A., II, 48.

 $trans-\beta-2$ -Carboxy-2-methylcyclohexylpropionic acid, A., II, 226.

2-Carboxy-2-methyl-s-octahydro-1phenanthrylacetic acid, a- and β -forms, and their dimethyl esters, A., II, 266.

2-Carboxy-2-methyl-s-octahydro-1phenanthrylideneacetic acid, A., II, 265.

β-Carboxy-γ-2-naphthyl-cisand -trans-Δβpentenoic acids, and their derivatives, A., II, 337, 338.

Carboxypeptidase, hydrolysis by, of d-dipeptides, A., III, 66.

o-Carboxyphenylacetic acid, p-nitro-, anhydride, A., II, 371.

N-o-2-Carboxyphenylbenzoyl-N'-o-4-nitro-2carboxyphenylbenzoylhydrazine, and oxadiazole, A., III, 135.

N-o-2-Carboxyphenylbenzoyl-N'-5-nitro-2'carboxyphenylbenzoylhydrazine, and its oxadiazole, A., II, 135.

its

p-Carboxyphenylethyl alcohol, A., II, 66. α-p-Carboxyphenylethyl alcohol, A., II, 66. 10-m-Carboxyphenylphenothiazine.

methyl ester, A., II, 353.

2-o-Carboxyphenyl-1:2:3:4-tetrahydroquinoline, A., II, 81.

2-o-Carboxyphenyl-1:2:3:4-tetrahydroquinoline-4-carboxylic acid, lactam of, and its methyl ester, A., II, 81.

2-o-Carboxyphenyl-1:2:3:4-tetrahydroquinoline-4-carboxylic acid, x-bromo-, and x-nitro-, lactams of, A., II, 82.

3-Carboxypyridaz-6-one, 4-hydroxy-, A., II, 145. y-3-Carboxy-o-tolylpropane-aβ-dicarboxylic acid, and its diethyl ester, A., II, 329.

 β -3-Carboxy-o-tolylpropionic acid. and diethyl ester, A., II, 329.

Carcinogenesis. See Cancer, development of. Carcinogenics, benzpyrene, A., III, 195.
chemical, effect of, on virus-induced papillomas in rabbits, A., III, 821.

effect of, on yeast growth, A., III, 368.

fluorescence of, A., I, 237. in skin, A., III, 195.

from spindle oil, concentration of, distillation and absorption, A., III, 416. hydrocarbon, analysis of, spectrographic, A.,

III, 661. aromatic, derivatives of, A., III, 478. determination of, in tissues, C., 128. fluorescence of, A., I, 28.

morphogenetic effect of, in axolotls, A., III, 120.

synthetic œstrogens and, A., III, 261. tumour induction with, A., III, 661. odorants and, A., III, 261.

protection against, by colloids on mouse skin, A., III, 416. Carcinoma. See Cancer.

Cardiac muscle. See under Muscle.

substances, chemistry and Cardio-active pharmacology of, A., III, 759.

Cardiolipins, acid, preparation of, from ox heart, A., III, 639.

Carica papaya, seeds, carpasemine from, A., II, 95.

Carnosine, determination of, in meat extract, C., 82.

Carnot's principle, A., I, 62.

Carollia perspicilata, neurofibromas in, multiple, A., III, 580.

Carotenæmia, hypervitaminosis-A and, A., III, 486.

Carotene, absorption of, A., III, 671. action on, of tocopherols, A., III, 425. added, stability of, on solid carriers, A., III, 547.

administration of, A., III, 353.

biological value of, and effect of vitamin-E on its utilisation, A., III, 751.

content of, in colostrum of high-grade cows, A., III, 602.

determination of, C., 134. in blood-plasma, C., 28.

in leaves, C., 41.

in lucerne, chromatographically, C., 139. in milk, C., 182.

in Wisconsin butter, C., 80.

from protein coagulate from green plants, assimilation of, A., III, 422.

in fruits, A., III, 783.

plasma.. See under Blood-plasma. preparation of, from carrots, A., III, 316.

requirements of, for maintenance of spinal fluid pressure in dairy calf, A., III, 422.

for plasma-vitamin-A maintenance in dairy calf, A., III, 422.

resorption of, from placenta, A., III, 198. utilisation of, effect on, of phosphatides, A., III, 43.

of soya-bean phosphatides and toco-pherols, A., III, 489.

vitamin-A activity of meat and fat from cattle fed on, A., III, 267.

See also Pro-y-carotene and Vitamin-A. Carotenes, action on, of hydriodic acid, A., II, 9.

in plants, A., III, 516. cis-trans-isomerisation and cis-peak effect in, A., II, 188.

 α - and β -Carotenes, interconversion of, A., III,

β-Carotene, content of, in serum, chromatographic investigation of, in newborn infant, Ă., III, 796.

effect of, in oxidation of plant and animal fats, A., III, 753.

isomerisation of, in relation to absorption, C., 182. separation of, from grass and silage, C., 90.

from vitamin-A-alcohol and -ester, and its determination, C., 134.

neo-β-Carotene, separation of, from grass and silage, C., 90.

Carotenoids, determination of, in butter fat, C., 133, 182.

in plant extracts, C., 90.

formation of, in wheat seedlings, A., III, 705. cis-trans-isomerisation and spectral characteristics of, A., II, 9.

mesomerism in, A., II, 192. metabolism of. See under Metabolism. palm oil, A., III, 783.

spectra of, absorption, A., III, 76.

and preparation, A., II, 74. stereoisomeric, spectral characteristics and configuration of, A., II, 40.

See also under Pigments.

Carotid, common, right, unusual origin of, in pigeon, A., III, 626.

ligation of, effect of, on blood pressure response to anoxia, A., III, 647.

Carotid body, cytology of, in cats, A., III, 236. Carotid sinus, effect on, of pressure at various altitudes, A., III, 719.

Carotid sinus syndrome, A., III, 170. Carotinæmia, in suckling, A., III, 13.

Carp, fingerlings of, respiratory movements in, A., III, 642.

Carpasemine, and its derivatives, A., II, 95. Carpocapsa pomonella, larvæ, diapausing, fatty material in, A., III, 745.

Carr-Price reagent, dispenser for, C., 182. Carrots, chromatophores of, A., III, 155.

preparation from, of carotene, A., III, 316. shoot development in, effect on, of naphthoxyand naphthyl-acetic acids, A., III, 782.

tissues, culture of, growth substances for, A., III, 707.

See also Daucus carota.

Carthamoidine, action of, A., III, 210.

Carthamus tinctorius, chlorophyll deficiency in, A., III, 380.

Cartilage, autogenous, grafts, A., III, 317.

chondroitin from, A., II, 327.

skeletal, effect of calcium gluconate and parathyroid hormone on, in mice, A., III, 157.

See also Bone, and Epiphyses.

Carvacryl dusoamylmethyl ketone, A., II, 41. Carvacryloxysilan, trichloro-, A., II, 191.

Carvacryl undecyl ketone, A., II, 41.

d-Carvone, oxime, phenylhydrazone, and semicarbazone, kinetics of formation of, A., I, 287. Caryophyllene, addition to, of acetylene-dicarboxylic ester, azodicarboxylic ester, and

maleic anhydride, A., II, 374. Caryophyllenic acid, synthesis of, A., II, 161.

Cascara, cathartic action of, in mice, A., III,

Casein, complex formation in, shown by electrophoresis, A., III, 763.

detection in, of adenine and guanine, C., 133. digestion of, by proteolytic enzymes, 'A., III, 500.

by staphylococci, A., III, 149.

effect of grinding on, A., II, 67. hydrolysates, effect of, on tumours in rats, A., III, 40.

enzymic, A., III, 294.

clinical feeding with, A., III, 671.

methionine- and tryptophan-free, A., II,

requirement of, minimum maintenance, for man. A., III, 265.

in milk. See under Milk.

in treatment of burns and wounds, A., III,

nutritive value of, compared with urea for chickens, A., III, 265.

Casein, properties of, from various animals, A., II, 383.

reaction of, with formaldehyde, A., II, 284; C., 24.

Cassava. See Manihot utilissima.

Castor beans, allergenic factor from, A., III, 81, 779.

germination of, carbohydrate formation in, A., III, 705.

Castor oil, sulphated, determination in, of total oil, C., 171.

Castrates, male, feeble-minded, ocular findings

in, A., III, 332. Castration, effect of, on feather weight in

domestic fowl, A., III, 254. penile erection ability after, in men with low

titres of urinary androgens, A., III, 411. prepuberal, functional, in men, A., III, 411.

relation of menopause, vaginal smear, and urinary gonadotropin changes after, in women, A., III. 811.

results of, in women under 40, A., III, 467. treatment with, of prostatic cancer, A., III, 196.

Cat, brain of. See under Brain.

Catalase, action of blood poisons on, A., III, 216.

bacterial, action on, of sodium azide, A., III, 694.

from red blood-corpuscles, A., III, 689. in vine shoots, A., III, 64.

. inactivation of, by hydrogen peroxide, A., III, 839.

liver-, activity of, in pregnant mice and mice bearing growing embryonic implants, A., III, 416.

yeast, action of chloroform and toluene on, A., III, 139.

Catalpa, fruit, catalposide from, A., II, 327.

Catalposide, A., II, 327. Catalysis, acid-base, A., I, 205.

auto-, quadratic, auto-vibrations in, A., I, 107.

by alloys, A., I, 108.

contact, atomic arrangement in, A., I, 66. heterogeneous, effect of diffusion, gas flow, and reaction in, A., I, 228.

relation of, to adsorption, A., I, 66.

philosophy and, A., I, 107.

surface, heat of activation and surface activity in, A., I, 288.

vapour-phase, apparatus for, C., 203.

Catalysts, activity of, for hydrocarbon polymerisation, A., I, 131.

alloy, A., I, 205.

chromium oxide, magnetic properties of, A., I,

chromium oxide-copper, preparation and reclamation of, A., I, 288.

chromium trioxide, action of, on isoalcohols and soaldehydes, A., II, 358.

copper powder, A., I, 180.

copper and ferric chlorides as, in Sandmeyer reactions, A., I, 253.

granule, excess temperature in, A., I, 228.

hydrogen fluoride, A., I, 41. iron, ammonia decomposition on, A., I, 288.

magnetic properties of, A., I, 109. nickel, for methane formation, A., I, 228.

for reaction of acetylene with hydrogen, A., I, 254.

hydrogenolysis with, of benzyl esters, A., II, 220.

N-nitroso-acylarylamide, in addition polymerisation, A., II, 120.

organic, for elimination of carbon monoxide from formamide, A., II, 70.

palladium, A., I, 108, 109.

plant, respiratory, relation of, to wood ethanolysis products, A., II. 162.

Raney, hydrogenation with, A., II, 89. silicate hydrated, for polymerisation of Δγ-butylene, A., I, 180.

vanadium, sulphur dioxide oxidation on, A., I, 254.

Catalytic debenzylation, A., II, 45. dehydrogenation, A., II, 30. of hydrocarbons, A., II, 117. Catalytic hydrogenation, high pressure, A., II,

molecular compounds in, A., II, 76.

of alkylphenols, with Raney nickel, effect on, of bases, A., II, 334.

of basic nitriles, in presence of Rancy nickel, A., II, 349.

of hydroxy-pyridines and -quinolines, and their esters; A., II, 378.

of aß-unsaturated carbonyl compounds, A., Iİ, 225.

quantitative, apparatus for, C., 52. oxidation, effect on, of hæmins, A., III, 838. reactions, boron fluoride as catalyst in, A., II,

Cataract, anoxia, A., III, 182, 531.

congenital, after German measles in mother, A., III, 584.

diabetic, production of, in rat, A., III, 531. due to dinitrophenol, A., III, 461.

dystrophic, in relation to other metabolic cataracts, A., III, 335.

experimental, classification of, in rats, A., III, 335.

extraction of, retinal detachment after, and reattachment after glaucoma attack, A., III. 803.

treatment of epithelial ingrowth after, A., III, 802.

infantile, amblyopia ex anopsia in, A., III, 584.

juvenile, associated with dermatosis, A., III,

operation for, glaucoma after, A., III, 104. provention of, with abrine, in tryptophan-deficient diet, A., III, 197.

Catarrh, pulmonary, chronic, in childhood, A., III, 579.

Catechin, effect of, on capillary resistance, A., III, 549.

oxidation of, to eyanidin, A., II, 271.

Catering, collective, and the housewife, A., III, 482.

food supplies for, A., III, 483.

large-scale, effect of, on nutritional values, A., III, 483.

organisation of, in Royal Air Force, A., III, 482.

See also Canteens.

Catfish. See Heteropneustes fossilis, and Plotosus

Catgut, as suture material, A., III, 349. use of, A., III, 476.

Cathartic salts, action of, on jejunal loop motility, A., III, 57.

Cathensin, activity of, in axolotls, A., III, 288. inhibition of, by tuberculin, A., III, 848.

of normal and neoplastic tissues, anaphylactic and serologic reactions of, A., III, 122. of normal and sarcoma bearing rat tissue,

peptidase activity of, A., III, 666.

Catheterisation, ureteric, treatment by, of calculi, anuria due to, A., III, 56. Cathodes, depolarisation of, in corrosion, A., I,

105.

mercury, arc, A., I, 1.

capacity of, in dilute solutions, A., I, 284. dropping, capillaries used for, C., 203. hydrogen ion discharge at, A., I, 18.

oxide, negative ions from, A., I, 162. oxide-coated, thermionic emission from, A., I,

93. palladium, hydrogen-ion discharge from, A.,

I, 283. Cations, reagents for, C., 5, 162.

surface-active, bactericidal action of, A., III, 560.

Cattle, Ayrshire, growth studies with, A., III, 786.

dairy, persistency in, genetics of, A., III, 712. falling disease of, A., III, 352. feeding of, limited and full-, A., III, 418. intracutaneous injection of, A., III, 843.

treatment of, with estrogens, A., III, 740. Cattleya, fruit growth in, A., III, 84. Caudate nucleus, cerebral cortex and, connexion

between, A., III, 246. Caustobiolites, classification of, A., I, 296. Cauterisation, deep, in prevention of cervical cancer, A., III, 821.

Cavitation, A., I, 17.

Cavum septi pellucidi, nature and occurrence of, A., III, 785.

Cebus capucina, susceptibility of, to poliomyelitis virus, A., III, 151. Cedrus atlantica, leaf oil of, sesquiterpene

hydrocarbon from, and its derivatives, A., II, 125.

Celandine, Russian. See Chelidonium majus. Celastrus scandens, leaves, phytochemistry of, A., III, 383.

Celestine, growth of, quinol on, A., I, 194. Celestite, Bashkir, S.S.R., A., I, 70.

Cell or Cells, electrochemical, Cicotti, for use in Piccardi phenomenon, C., 152.

copper-copper sulphate, potential of, A., I, 39.

electrophoresis, Tisclius, C., 49.

for amperometric titration, C., 152.

Hooker type S chlorine, current efficiency of, C., 204.

mercurous chloride, C., 152.

zinc-graphite, for conductometric titration, C:, 49.

Cell or Cells, photo-electric, barrier-layer, for temperature measurement, C., 151.

extreme ultra-violet, C., 200. for particle counting, thickness measurement

of, C., 202. for photometric measurements, (P.), C., 200.

infra-red absorption, C., 199. phosphor, photo-voltage in, A., I, 118.

photometry with, zero-resistance circuit for, C., 201.

selenium, barrier-layer, measurements on, A., I, 74.

drift of, in relation to their use in temperature measurement, C., 151.

Cell or Cells, physiological, action on, of amines in vitro, A., III, 450.

of cetyltrimethylammonium bromide, A., III, 59. chromosomes and nucleoli in, relation between

number of, A., III, 629. division of, mathematical biophysics of, A.,

III, 160. theory of, and energy exchange principle, A., III, 712.

embryonic and undifferentiated, so-called, A.,

glycolysis and survival of, under aerobic

and anaerobic conditions, A., III, 826. living, respiration of, action of vitamin-C in,

A., III, 674. malignant and normal, radiosensitivity of, A., III, 667.

mouse and rat, compatibility of, in mixed tissue cultures, A., III, 161. multiplication of, A., III, 712.

nuclei of, calcium and magnesium content of, in mammals, A., III, 573.

B-vitamins in, A., III, 268. oxidation of, effect of adrenaline on, A., III,

589. parasitised, mitosis in, A., III, 713.

plant. See Plant cells.

respiration of, A., III, 146.

after succinic dehydrogenase inhibition, A., III, 273.

effect of sulphonamides on, A., III, 204. role of creatine in, A., III, 660.

spindle, of neural origin, transformation of, into macrophages, A., III, 572.

Cellobiase in barley and malt, A., III, 68. Cellobiose, metabolism of. See under

Metabolism. β-Cellobiose, heptaacetate, p-benzeneazobenzoate, A., II, 6.

ocia(hepia)-p-benzeneazobenzoate, A., II, 6. Cellophane for treatment of burns, A., III,

Cellulose, action on, of ultra-violet light, A., II, 292.

apparatus for, C., 169.

adsorption by, of water, and effect of swelling and drying on surface, A., I, 153.

Cellulose, alkali-, structure of, A., II, 122. content of, in Montana grasses, seasonal change in, C., 90. cotton, cuprammonium dispersions of, flow characteristics of, C., 119. crystal structure and morphology of, in relation to reactivity, A., II, 186. decomposition of, by soil bacteria, A., III, 72. by thermophilic bacteria, A., III, 561. determination of, in feeding-stuffs, C., 133. in plant materials, C., 189. diffusion and sedimentation of, and its derivatives, A., I, 153. digestion of, by protozoa, A., III, 293. dispersions, viscosity of, cupriethylenediamine as solvent for determination of, C., 119. dry, swollen, amorphous content of, studied by thallous ethoxide method, A., II, 187. electrokinetic properties and surface conductivity of, A., I, 84. gels, deformation and swelling in, A., I, 174. molecular weight of, and its polymerisation, A., II, 327. molecules, form and mobility of, A., I, 240. in solution, colloidal gels formed from, A., nitration of, A., I, 174. oxidation of, with periodic acid, A., I, 41. oxidised, thrombin inactivation and, A., III, reactions of, kinetics of, C., 71. with hydrogen chloride and water, A., I, 15. solutions, structure of, effect of association and solvation on, A., I, 174. structure of, micellar, A., I, 146. value of, in children's diet, A., III, 265. xanthation of, with ethyl alcohol and sodium hydroxide, A., II, 122. Cellulose acetate, association and solvation of, A., I, 174. osmotic pressure and viscosity measurements of, A., I, 36. viscosity of solutions of, A., II, 9. triacetate, X-ray structure of, A., I, 5. acetate phthalate, as enteric coating, A., III, 554. toxicity of, in dogs and rats, A., III, 554. esters, determination in, of plasticisers, C., films, structure and properties of, A., I, 280. formals, determination in, of formaldehyde,

nitrate, films, structure and properties of, A., I, 280. solutions, viscosity of, in presence of inorganic salts, A., I, 174. swelling state of, A., I, 280. viscosity of, A., I, 84. triphenylmethyl ether, A., II, 153.

Cellulose fabrics, cuprammonium dispersions of, flow characteristics of, C., 119. Cellulose fibres, structure of, A., I, 15, 36.

Cellulose pulp, nomograph for, C., 119. Celluloseglycollic acid, and its aluminium and sodium salts, response of animals to, A., III, 823.

Cement, alumina, determination in, of silica, C., 9. blast-furnace, alumina and aluminosilicate, determination of activity of, C, 7.

clinker-limestone-base, determination in, of clinker, C., 59.

determination in, of iron, lime, and titanium, C., 163.

Portland, heat of hydration of, C., 163. white, determination in, of ferric, manganese, and titanium oxides, C., 67. Cementite, crystal structure of, A., I, 80.

hydrogen overvoltage on, A., I, 18. Centaurea behen, root of, constituents of, A., II, 284.

ζCentauris, spectrum of, A., I, 161. Centrifuges, angle, adaptor for testing, C., 207. high-speed, plugs for, C., 207. ultra-. See Ultracentrifuges.

Cephallenians, ancient, of Mediterranean island, A., III. 91.

Cephalometry, precision method of, A., III, 1.

Ceratostomella ulmi, growth of, effect on, of antibiotics, A., III, 433. pyridoxine for, A., III, 289.

Cercocebus torquatus atys, prostate of, effect of cestrogenic stimulation on, A., III, 736.

Cercopithecus cephus, susceptibility poliomyelitis virus, A., III, 151. Cereals, calcium and phosphorus in, availability

of, A., III, 197. determination of, in sausages, C., 131. grain, metabolism of, A., III, 308, 853. harvesting of, early, biochemistry physiology of, A., III, 311.

malted and unmalted, determination in, of vitamin- B_1 , C., 182. seeds, smut spore load on, C., 189.

yellow rust in, resinous substance formed from, A., III, 384.

See also Barley, Wheat, etc. Cereal products, determination in, of iron, C.,

Cerebellum, localisation in, A., III, 581. Cerebral cortex, acetylcholine level of, effect of anoxia and hypoglycemia on, in rats, A., III, 179.

audio-frequency localisation in, in dogs, A., III, 586. caudate nucleus and, connexion between, A.,

III, 246. cellular structure of, in marsupials, A., III,

electrical activity of, effect of sulphonamides on, A., III, 801. impulse conduction in, and motor manage-

ment of convulsions, A., III, 645. medial aspect of, functional organisation of, in

primates, A., III, 402.

metabolism of, effect of carbon dioxide tension on, A., III, 489.

motor activity of, rôle of premotor cortex in, in man, A. III, 102.

postcentral, lesions of, growth asymmetry due to, A., III, 644.

potentials of, distribution of, due to vapour in sufflation and stimulation of olfactory bulb and pyriform lobe, A., III, 647.

occipital, effect of blood-sugar levels on, in adults, A., III, 725. in adults, A., III, 725.

responses of, effects of blood pressure and hyperventilation on, A., III, 645.

striate area of, in primates, A., III, 25. tactile sensory area of, organisation of, in chimpanzee, A., III, 402.

volume of, in mammals, A., III, 402. Cerebrin, and its derivatives, A., II, 5. Cerebrospinal fluid, after spinal anæsthesia, A., III. 103.

calcium-protein system in, A., III, 528. determination in, of glutamine-like substance, C., 27.

of proteins, A., III, 180; C., 78. of proteins and protein fractions, C., 28. effect on, of altitudes, in dogs, A., III, 578. glutamine-like substance in, A., III, 12. Kahn reaction in, A., III, 80.

pressure of, effect of anoxia on, in dogs, A., III, 460.

maintenance of, carotene requirements for, in dairy calf, A., III, 422.

protein content of, during intracranial tumours, A., III, 725.

in relation to Pandy test, A., III, 647. removal from, of red blood cells, inefficacy of lumbar puncture for, A., III, 23. Cerebrum, abscesses of, treatment of, A., III,

247. concussion of, A., III, 247.

post-, prognosis in, A., III, 646.

degeneration of, fam atrophy, A., III, 331. familial, with cortical

frontal pole of, functional organisation of, in chimpanzee and monkey, A., III, 402. function of, learning, A., III, 337.

glia fibres of, reticular nature of, in frog and higher vertebrates, A., III, 389. hypoglossal nucleus of, stimulation of, by acetylcholine, A., III, 401.

Cerebrum, injuries to, due to mechanical violence, A., III, 180.

ischæmia of, progressive, A., III, 172. localisation in, A., III, 581.

median eminence of, destruction of, genital changes in guinea-pig due to, A., III, 109.

tumour of, in dog, resembling human medulloblastoma, A., III, 39. ventricles of, ependyma of explants of, A., III, 92.

Cerin, and its derivatives, A., II, 375. dipole moment of, A., I, 142.

Cerium, spectrum of, arc, A., I, 113.

Cerium alloys with gallium, crystal structure of, A., I, 239.

Cerium dioxide, electrical conductivity of, in mixtures with thoria, A., I, 283.

phosphate, colloidal gels, opacity of, A., I, 36. Cerium separation :-

separation of, from manganese, C., 161. Ceroid, in nutritional cirrhosis, A., III, 658.

similarity of, to oxidised unsaturated fat, A., III. 490.

Cetratostomella, vitamin deficiencies of, A., III,

Cetyl esters, synthesis of, A., II, 228.

2-Cetylaminopyridine, picrate, A., II, 274. Cetyldeoxyanisoin, A., II, 129. N-Cetyldithiocarbamic acid, cetylamine salt, A.,

1I, 183. Cetylpyridinium chloride, pharmaceutical

properties of, A., III, 428.

a-Ĉetylstilbene, 4:4'-dihydroxyand dimethyl ether and di-2-naphthoate, A., II,

Cetyltrimethylammonium bromide. See CTAB. Cetylurethane, A., II, 199.

Cevine, effect of, on circulation of anæsthetised dogs, A., III, 554.

Chabazite, occlusion of hydrocarbons by, A., I, 170.

Chatomium funicola, glucose dissimilation by,

A., III, 768. Chalcocite, A., I, 259.

Chalkogens, isomorphous replacement of, in organic compounds, A., I, 177.

 ψ -Chalkogens, isomorphous replacement of, in organic compounds, A., I, 177.

Chalkone-4'-\(\rho\)-d-glucoside, 2':4'-dihydroxy-, A.,

Chamotte products, analysis of, C., 16.

Chancroid, treatment of, with sulphonamides, A., III, 54.

Chara, antheridia, pigments of, A., III, 384. Charcoal, active, thermal constants of, A., I,

powdered, electrical conductivity of, A., I, 39. reaction of, with potassium nitrate, A., I, 110. softwood, British, botanical source of, C., 156. wood, powdered, identification of, C., 17, 115.

Cheek, epithelioma of. See under Epithelioma. Cheese, determination in, of fat, C., 131.

of physical properties, C., 131. Chelidamic acid, ferric complexes of, A., II, II1. Chelidonium majus, alkaloids of, A., III, 568.

Chemicals, bacteriostatic power of, on tubercle bacillus, Pryce's slide culture method for testing, A., III, 831. fungicidal and fungistatic effects of, A., III,

559.

Chemiluminescence, A., I, 213. Chemists, Italian, work of, A., I, 293 well-known, biographies of, A., I, 69.

Chemistry, advances in, in relation to medicine. A., III, 607.

Argentine Republic, A., I, 69. immunology and, A., III, 304. in the Old Testament, A., I, 69. organic. See Organic chemistry. Vienna, A., I, 69.

Chemotherapeutics, action of, A., III, 209. biochemical characterisation of, A., III, 506,

in-vivo and in-vitro, A., III, 209. fluorinated compounds as, A., II, 15. lipophilic, of the sulphonamide group, A., II,

toxicity of, on healthy tissue, A., III, 131.

Chemotherapy, A., III, 56, 607. bacterial, A., II, 25, 365, 368. cationic, with reference to accidines, A., III, 758.

in tropical medicine, A., III, 680.

intraperitoneal and rectal, A., III, 207. tables for calculation of size of samples for, A., III, 347.

Chenodeoxycholic acid. See Cholanic acid, 3(a):7(a)-dihydroxy-

Chest, pain in, A., III, 638.

wounds of, treatment of, in Middle East, A., III, 579.

Chickens, intensively-reared, cod-liver oil and ultra-violet irradiation for, A., III, 128. See also Fowls, Hens, etc.

Chicken-pox, treatment of, with contramine, A., III, 62.

Childbirth, painless, anticipating labour, by procaine spinal anæsthesia, A., III, 58. See also Dystocia, Labour, Maternity,

Pregnancy, etc. Children, asthmatic and non-allergic, potassium and sodium metabolism of, A., III, 827.

calcium and vitamin-D requirement of, A., III, 825.

congenital defects in, after infectious diseases

during pregnancy, A., III, 234. growth of, hormonal effects on, A., III, 188. height, ossification, appearance, and weight

of, seasonal variations in, A., III, 709. infections of, chemotherapy of, A., III, 53. physical condition and progress of, A., III, 1. physiology of, vitamins and, A., III, 43. posture of, analysis of, A., III, 1.

pre-school, riboflavin and thiamin requirement of, A., III, 672.

school, intelligence and physical efficiency of, relation between, A., III, 725.

sick, vitamin-C requirements of, A., III, 201. Chimpanzee, reproduction in, A., III, 29, 235. Chimyl alcohol, isolation of, from testes extract and its identity with testriol, A., II, 285; III, 741.

Chinese, from Canton, M, N types of, A., III, 160.

Chiroptera. See Carollia perspicilata.

Chlamydomonas, susceptibility of, to colchicine, A., III, 781.

Chlamydoselachus anguineus, urogenital system of, A., III, 233.

Chloral, derivatives of, with aromatic amines A., II, 157.

hydrate, decomposition of, by piperidine, A. II, 183.

reaction of, with magnesium cyclohexyl bromide, A., II, 121.

Chlorates. See under Chlorine.

Chlorazol-black E, staining with, A., III, 161. Chlorazol-fast-pink, intra-vitam staining and toxicity of, in mice and rats, A., III, 450. Chlorella, chlorosis in, in sulphur deficiency, A., III, 514.

Chlorella pyrenoidosa, assimilation and respiration of, A., III, 706.

cation exchanges in, A., III, 623.

constituents of, in culture media, A., III, 82. Chlorella vulgaris, dry weight of, A., III, 705. Chlorides. See under Chlorine.

Chlorination, semi-micro-, of organic com-pounds, A., II, 156.

Chlorine, dangerous concentration of, signalling of, C., 46.

electric discharge in, light effect in, A., I, 161. hydrolysis of, A., I, 62.

isotopes, enrichment of, A., I, 133. in carbon tetrachloride, A., I, 183.

masses of, A., I, 188. reaction of, with nitric oxide, A., I, 251.

spectrum of, and nuclear spin, A., I, 3. Chlorine azide, A., I, 23.

monoxide, thermochemistry of, A., I, 155. dioxide, determination of, in water, C., 138. irradiation of, A., I, 133. Hydrochloric acid, as a condensing agent, A.,

II. 362. determination of, in process of manufacture,

C., 1.

Chlorine:-

Hydrochloric acid, enthalpy and heat of dilution in aqueous mixtures of, A., I, 86. use of, as condensing agent, C., 197.

Chlorides, determination of, in copper refining electrolyte by potentiometric titration, C., 106.

volumetrically, with potassium arsenate and chromate as indicators, C., 64.

excretion of, during diuresis in man, effect of exercise on, A., III, 258.

in normal and adrenalectomised cats after water and salt ingestion, A., III, 28. pH of mixtures of, with phosphates, A., I, 127.

Chlorates, determination of, by catalytic reduction, C., 161.

Hypochlorous acid, dissociation constant of, À., I, 153.

Hypochlorites, chlorate formation in solutions of, A., I, 107.

decomposition of, in solution, A., I, 183. Perchloric acid, ionisation spectrum of, A., I, 127. specification for, C., 196. and Raman

use of, in analysis, C., 109. Chlorine determination :-

determination of, C., 19. in fruit product ash, C., 31. in water, C., 138.

residual, in water, C., 38. Chloris gayana, root storage in, A., III, 82. Chloritoid, Mysore State, A., I, 232.

Chloroamines, determination of, in water, C., 138.

Chloroform, anæsthesia with. See under Anæsthesia and Anæsthetics.

equilibrium of, with acetic acid, acetone, and water, A., I, 155. Chlorometry. See Analysis, chlorometric.

a-Chloroparaffins, interaction of, with ammonia,

and primary, sec., and tert. amines, A., II, 34. Chlorophyll, A., II, 311, 312.

derivatives, water-soluble, as therapeutics, A., III, 681.

effect of, on growth of fibroblasts in tissue

culture, A., III, 521. fluorescence of, A., I, 77.

in fats, in relation to rancidity, C., 122. formation of, in etiolated wheat germ, A., III, 705.

heritable variations in, A., III, 312. mutations of, plastids in, A., III, 380.

protein complexes of, A., III, 784. Chlorophyll-a and -b, isolation and determination of, in avocados, C., 181.

spectra of, absorption, A., III, 624. Chlorophyll d, in red algæ, green pigment of, A.,

II, 85.

Chlorophyll d', A., II, 85. isoChlorophyll d, A., II, 85. isoChlorophyll d', A., II, 85.

Chloropicrin, detection of, C., 186.

Chloroplasts, activity of, outside the cell, A., III 306.

structure of, and chlorophyll location, A., III, 380.

Chloroprene, reaction of, with iodine chloride, A., II, 149.

Chloroviolins, and their derivatives, A., II, 311.

Chloroviolinporphyrin, trimethyl ester, and its copper salt, A., II, 311.

Cholemia, hemorrhagic diathesis in, A., III, 36. Cholanic acid, 12-bromo-3(a): and $-3(\beta):11(a)$ dihydroxy-, 3-acetyl derivatives, methyl esters, A., II, 51.

12(a)-hydroxy-, A., II, 105.

3(a):7(a)-dihydroxy-, barium salt, A., II, 264. 3(a):7(a):12(B)-trihydroxy-, 3(a):7(a)- $7(a):12(\beta)$ -diacetyl derivatives, esters, A., II, 264.

Cholecystectomy, effect of, on liver function, A., III, 413.

Cholecystitis, A., III, 596. acute, treatment of, A., III, 116.

prevention of, postural treatment of biliary colic in relation to, A., III, 257.

Cholecystography, pheniodol as contrast medium for, A., III, 257

Choledocho-duodenal junction, histology of, A., III, 625.

Cholelithiasis, A., III, 596.

△11-Cholenic acid, 3-hydroxy-, a-oxides of, A., II, 51.

Cholera, blood in, A., III, 168.

fæces of, chemistry of, A., III, 193. toxin, components of, A., III, 700.

vaccine. See Vibrio choleræ.

vibrios, oxidation by, amino-groups in relation to, A., III, 224. virus, chicken, disaggregation of, A., III, 225.

Δ4:7-Cholestadiene-3:6-dione, 2:4:7-tribromo-, A., II, 21.

△3:5-Cholestadien-2-one, A., II, 230.

carbazone of, A., II, 104. $\Delta^{8(9):14(15)}$ or $\Delta^{9(11):8(14)}$ Cholestadian 3(β)-hydroxy

 $3(\beta)$ -hydroxy-, acetyl derivative, and its 2:4-dinitrophenylhydrazone, A., II, 20.

Cholestane, 5-chloro-3:6-dihydroxy-, 3-acetyl-6-benzoyl derivative, A., II, 79.

5-hydroxy-, A., II, 229.

5-hydroxy-, A., 11, 229. 2(a)- and 2(β)-hydroxy-, A., II, 230. 3(β):5-dihydroxy-, and its 3(β)-acetate and 3(β):5-diacetate, A., II, 229. 3(β):6-dihydroxy-, 3(β)-acetate, A., II, 229. Cholestane-3(β):5(a)-diol-8-one, 7-bromo-, and its acetate A. II, 21.

its acetate, A., II, 21.

Cholestanedione, pyridazine derivative of, A., II,

Cholestane-3:6-dione, 5(a)- and 7-bromo-, and 2:2- and 5(β):7-dibromo-, A., II, 21.

Cholestane-7:15-dione, $3(\beta)$:14-dihydroxy-, and $3(\beta):8:14$ -trihydroxy-, $3(\beta)$ -acetyl derivatives, A., II, 21.

Cholestane-3(β):5:6-(trans)-triol, A., II, 104.

Cholestane-3(β):7:8-triol, A., II, 20.

Cholestanol-A, hydroxy, acetyl derivative, and its derivatives, A., II, 266. Cholestanol-B and -C, hydroxy-, acetyl deriv-

atives, A., II, 266.

Cholestan-1-ol, and its benzoate, A., II, 266.

Cholestan-3(β)-ol, 7-chloro-, A., II, 20. Cholestan-4-ol, acetate and benzoate of, A., II,

Cholestan-7-ols, 3(β)-hydroxy-, 3-acetyl derivatives, dehydration of, A., II, 20.

Cholestan-7(a)-ol, $3(\beta)$ -hydroxy-, and its derivatives, A., II, 20.

Cholestan- $7(\beta)$ -ol, $3(\beta)$ -hydroxy-, acetyl derivative, A., II, 20. Cholestan- δ -ol, $3(\beta)$:7-dihydroxy-, diacetyl

derivative, A., II, 20. Cholestan-3-ol-6-one, 5(a)-bromo-, A., II, 21.

Cholestanone-A, hydroxy-, acetyl derivative, A., II, 266.

Cholestan-1-one, A., II, 266. Cholestan-2-one, A., II, 230.

azines of, A., II, 266.

Cholestan-2-one, $3(\beta)$ -hydroxy-, and its derivatives, A., II, 267.

Cholestan-3-one, 2-hydroxy-, 2-acetyl derivative, rearrangement products of, A., II, 266. Cholestan-4-one, and 3-hydroxy-, and its acetate, A., II, 266.

Cholestanyl hexahydrobenzoate, A., II, 301. 7-Cholestanyl chloride, (3β) -hydroxy-, acetyl derivative, A., II, 20.

Cholestan-1-yl acetate, A., II, 266.

Cholesteatoma, of external auditory meatus, A., III, 184.

△3-Cholestene-3:4-diol, A., II, 266.

4*-Cholestene-3:6-dione, reduction cholestan-3-ol-6-one, A., II, 230.

△4-Cholestene-3:6-dione, 2-bromo-, 2:7-dibromo-, and its diquinoxaline derivative, and 2:4:7:7-tetrabromo-, A., II, 21.

4-bromo-, quinoxaline derivative of, A., II, 21. y-Cholestenol, transformation products of, A., II, 20.

Cholestenone, action on, of lead tetra-acetate, A., effect of, on fibroid formation, A., III, 481.

oxidation of, by oxygen, A., II, 230.

△4-Cholestenone, formation of, from cholesterol dibromide, A., II, 196. new form of, A., II, 80. 4*-Cholesten-3-one, 2-hydroxy-, 2-acetate, A.,

II, 341.

 $\Delta^{8:(14)}$ -Cholesten-~-one, $3(\beta)$ -hydroxy-, acetyl derivative, A., II, 20. $\Delta^{8:(14)}$ -Cholesten-15-one, $3(\beta)$ -hydroxy-, A., II,

21. acetyl derivative, and its 2:4-dinitrophenylhydrazone, A., II, 21.

o-Cholestenyl acetate, oxidation products of, A., II, 20.

Cholesterinosis lentis, A., III, 651.

Cholesterol, action of, on normal and immune hæmolytic serum, A., III, 163.

compounds of, with antipyrine and sarcosine anhydride, A., I, 176.

determination of, in blood-serum, colorimetrically, C., 28.

exogenous, serum-cholesterol from, independence of, in infants and children, A., III, 240.

feeding of, to animals, A., III, 823. in adrenals. See under Adrenals.

in aorta. See under Aorta. in bile. See under Bile.

in blood. See under Blood.

lysis of, in atheroma, A., III, 396.

physico-chemical constants of, and of its ozonide, A., I, 236.

resinification of, A., II, 340. serum-. See under Blood-serum.

Cholesterol, $7(\beta)$ -hydroxv-, dibenzoate, A., II, 104.

*24-hydroxy-, and its derivatives, preparation

Cholesterol β-oxide, A., II, 229. and its benzoate, A., II, 79.

Cholesteryl esters, synthesis of, A., II, 228. i-Cholesteryl methyl ether, 24-hydroxy-, A., II, 301.

Cholic acid, and its derivatives, constitution and optical activity of, A., II, 264.

formation of, action of milk against, in chicks, A., III, 48.

salts, determination of, in bile and blood, C., 176.

secretion of, effect of cinchophen on, A., III,

Choline, action of, and its precursors, on weanling rats, A., III, 750.

on serum-phosphatase and hepatic dye clearance of dogs on deficient diets, A., III, 749.

and prevention of hæmorrhagic kidneys in rats, A., III, 750.

arsenocholine, betaine, methionine and, interrelation of, in chicks, A., III, 484.

perchlorate, nitric ester, pharmacological action of, A., III, 553.

deficiency of, effect of atebrin on, in rats, A.,

determination of, colorimetrically, C., 92. in plasma and urine, C., 126.

with Neurospora, C., 37.

electrical activity of, A., I, 40.

esters, with atropine-like action, A., III, 553. with cycloplegic and mydriatic action, A., III, 181.

excretion of, in diabetes, A., III, 755. phosphatide, turnover of, effect of dietary choline on, A., III, 676.

requirement of, for rats, inherited differences in, A., III, 42.

in tropical heat, A., III, 486.

specificity of, for pneumococcus growth, A., III, 618.

spectrum of, Raman, A., I, 4. Choline-acetylase, A., III; 286.

Choline-esterase, A., IIF, 499. activity of, effect of hormones on, A., III, 100. in growing animals, A., III, 839. determination of, C., 37.

effect on, of barbiturates in tissues, A., III, 553.

in brain tissue, A., III, 460.

in spinal cord, effect of dorsal root section on, in cats, A., III, 400.

Choline-esterase, inhibition of, by atebrin, A., III, 428.

by eserine and its derivatives, A., III, 494. muscular activity and, A., III, 176. reaction of, with acetylcholine and eserine,

A., III, 765.

relation between ascorbic acid and, A., III, 271.

serum-. See under Blood-serum.

sex function in relation to, in guinea-pig, A., III, 253.

types of, A., III, 286.

Choline-oxidase, in liver of rats, A., III, 194,

Cholophenone. See Phenyl norcholyl ketone. Choloselectan, structure of, A., II, 24. Chondrococcus columnaris, A., III, 846.

Chondrocranium, of torrent-dwelling anuran tadpoles, A., III, 569.

d-Chondrocurine, A., III, 88.
Chondrodendron tomentosum, curare alkaloids from, A., III, 88.

Chondrodystrophia calcificans congenita, A., III,

Chondroitin, from cartilage, A., II, 327. Chondrosamine, derivatives of, A., II, 249. Chondrosarcoma, iliac bone. See under Bone,

iliac.

Chordomas, cranial. See under Skull.

Chordotomy, anterior, performance and results of, A., III, 643.

Chorioepithelioma, hormone studies in presence of, A., III, 411. male, treatment of, with pregnancy serum, A.,

III, 472.

Chorioma, extragenital, in relation to teratoid vestiges in testicles, A., III, 481.

Choriomeningitis, lymphocytic, A., III, 564. recurrent, A., III, 437.

virus, association of, with red bloodcorpuscles in infection, A., III, 302.

Chorion, human, villi of, cytology of, A., III,

Chorionepithelioma, diagnosis of, pregnancy test in, A., III, 470.

mediastinal, with gynæcomasty, A., III, 122. of bladder. See under Bladder.

Choroid, cancer of, metastatic, A., III, 184. melanoma of, malignant, with metastases, removal of secreting tissue of testis for, A., III, 196.

neurofibroma of, A., III, 532. Choroideræmia, A., III, 337.

Choroiditis, macular, exudative, juvenile, A., III, 531.

Christophite, roasting products of, A., I, 159. Chromans, with a-tocopherol-like structure, synthesis of, A., II, 199.

Chromates. See under Chromium.

Chromatography. See Analysis, chromatographic.

Chromatolysis, chemical mechanism in, A., III,

recovery of efferent neurones and, A., III, 459.

Chromatophores, A., III, 155.

grafted, development of, effect of temporal and regional differentials on, A., III, 571. migration of, as response to influence of

developing pigment cells, A., III, 571. Chromens, preparation of, from 4-substituted

coumarins, A., II, 23. Chromic acid. See under Chromium.

Chromite, Campo Formoso, Brazil, A., I. 160. Western Hemisphere, A., I, 258.

Chromium, electro-deposited, structure of, A., I, 53, 239.

electroplating with, baths for, determination in, of iron, C., 162.

films, optical properties of, A., I, 273.

ions, complex, conductometric titration of, A., I, 68.

luminous excitation of, atomic-ray apparatus for, A., I, 73. nuclear scattering cross-section for, A., I, 263.

X-ray wave-lengths for, A., I, 270. Chromium alloys with aluminium and copper, A., I. 57.

Chromium bases (chromiumammines), A., I, 206. Chromium triethylenediamine luteo-salts, thermal decomposition of, A., I, 206.

Chromium antimonate, niobate, and tantalate, lattice constants of, A., I, 195.

fluorides, A., I, 45.

halides, volatility of, and equilibria in iron chroming, A., I, 177.

Chromic hydroxide, colloidal, sols, potentiometric titration of, A., I, 83. dispersed, ultrafiltration and desiccation

of, A., I, 59. properties and structure of, in relation to method of preparation, A., I, 145.

oxide, catalytic action of, on aliphatic isoalcohols and isoaldehydes, A., II, 358.

magnetic properties of, A., I, 272. colloidal, gels, catalytic activity of, A., I, 131.

parachor of, in water, A., I, 122.

Chromous salts, spectra of, absorption, ultra-violet, reactions shown by, A., I, 205. Chromous iodide, A., I, 45.

Chromic acid, electrolytic reduction of, in aqueous solutions, A., I, 156.

prevention and treatment of lesions caused

by, A., III, 557. Chromates, co-precipitation of, with barium sulphate, C., 12.

lattice constants and structure of, A., I. 216.

prevention and treatment of lesions caused by, A., III, 557.

Dichromic acid, constitution of, A., I, 214. Dichromates, oxalic acid oxidation induced by ferrous sulphate, A., I, 227,

prevention and treatment of lesions caused by, A., III, 557.

Perchromic acid, blue, A., I, 19.

Chromium determination and separation :determination of, colorimetrically, with hæmatoxylin, C., 8.

in acid slag, C., 12. in leather, by wet oxidation, C., 110. in stainless steel, spectrographically, C., 67.

separation of, from manganese, C., 161. Chromium lakes, optically active, A., II, 194. Chromium ores, Morocco, A., I, 112. Berri-Buscera, Spanish

Chromocyanide-chromicyanide couple, oxidation potential of, A., I, 40.

Chromones, natural, A., II, 199.

Chromosomes, breaks in, after X-irradiation, cytology of, A., III, 573.

chromosomin from, A., III, 819.

count of, in somatic tissues of cats, A., III, 319.

heterochromatin in, in mammals, A., III, 236. meiotic, pericentric inversion resulting in, A., III, 630.

X-ray sensitivity changes in, and nucleic acid cycle, A., III, 788.

mutations of, changes due to, A., III, 448.

nucleoproteins of, A., III, 320. root-tip, chlorazol-black E as stain for, A..

III, 161. size of, in relation to nuclear volume, ribonucleic acid, and B vitamins, in rat organs, A., III, 789.

size and synthetic activity of, from rat neoplasms, A., III, 819. Chromosomin, A., III, 819.

Chromyl fluoride, v absorption, A., I, 77. vapour, spectrum

Chrysanthemums, blooming of, controlled with

lights, A., III, 852. tetraploids in, colchicine-induced, A., III, 85

Chrysene, condensation of, with succinic anhydride, A., II, 298. derivatives, A., III, 478.

spectra of, absorption, ultra-violet, A., I, 28.

o-2-Chrysenoylbenzamide, A., II, 126. o-2-Chrysenoylbenzoic acid, and its ethyl and methyl esters, A., II, 126.

o-2-Chrysenoylbenzoyl chloride, A., II, 126.

α-antitoxin and antihyaluronidase in, A.,

111, 148.

2-(2'-Chrysenyl)cinchonic acid, A., II, 379. o-2-Chrysenylmethylbenzoic acid, and its derivatives, A., II, 126. 2-(2'-Chrysenyl)quinoline, and its picrate, A., II, △8(14):0-Chrysitadiene-trans-trans-6:7:11:12acid. dimethyl tetracarboxylic dihydrazide of, A., II, 101. isoChrysofluorene, synthesis of, A., II, 190. Chrysotile, X-ray scattering by, A., I, 167. Chyle, composition of, from case of traumatic chylothorax, A., III, 172. Chymotrypsin, scattering by, of X-rays, A., I, 247.Cinchona alkaloids, A., II, 86, 209, 281. in human plasma, A., III, 758. in pneumonia, A., II, 174. Cinchonic acid, I-benzoyl-4-piperidylmethyl ester, and its picrate, A., II, 170. apoCinchonidine, 6'-amino-, derivatives of, A., II, 174. Cinchonidinetetra-azidocopper, A., I, 290. Cinchoninetetra-azidocopper, A., I, 290. Cincholoipone ethyl ester, hydrochloride of, A., II, 281. Cinchophen, effect of, on cholic acid secretion, A., III, 596. Cinema, visual physiology of, A., III, 181. 1:8-Cineole, halogen derivatives of, A., II, Cincolic alcohol, and its allophanate and phenylurethanes, A., II, 374. Cinnabar, colloidal deposition of, A., I, 258. heat of transformation of, to metacinnabarite, A., I, 282. Cinnamaldehyde, condensation of, with 2- and 4-methylpyridines, A., II, 233. 4'-Cinnamamidodiphenylsulphone, 4-acetyl derivative, A., II, 131. Cinnamic acid, benzyl ester, treatment with, of deafness, A., III, 106. tert .- butyl ester, reactions of, with magnesium phenyl bromide, A., II, 220. cyanomethyl ester, A., II, 213. dissociation constant of, in aqueous acetone and aqueous sucrose, A, I, 281. electrolytic reduction of, A., II, 78. parthenyl ester, isolation of, from guayule resin, A., II, 269. Cinnamie acid, 5-bromo-2-hydroxy-, A., II, 98. 3:5-dibromo-2-hydroxy-, A., II, 99. 4-chloro-3:5-dinitro-, A., II, 335. trans-Cinnamic acid, photochemical dimerisation of, A., II, 48. Cinnam-methyl-\beta-p-anisylethylamide, A., III, 856. N-Cinnamoyl-N-(or N'-)p-dimethylaminophenyl-N'(or N-)1-menthylcarbamide, A., II, N'-Cinnamoylsulphanilamide, A., II, 365. Cinnamylhistamine, a-amino-, acetyl derivative, A., II, 83. Cinnamylideneacetone tetrabromide, A., II, 372. 5-Cinnamylidenemethyl-3-methylisooxazole, 4-nitro-, A., II, 238. Cinnolines, A., II, 25. Ciona, self-sterility in, genetics and physiology in, A., III, 518. Circa 42, treatment with, of itching skin, A., III, 496. Circle of Willis. See under Eyes. Citral, condensation of, with malonic acid, A., II, Citric acid, alkali antimonyl salts, A., II, 182. detection in, of oxalic acid, C. 21. determination of, in biological materials and fermentation media, C., 190. in milk, C., 80. microvolumetrically, C., 190. endogenous, production of, relation between, and administered alkali, A., III, 427. source of, skeleton in relation to, A., III, fermentation of, by lactobacilli and strepto-

cocci, A., III, 845.

from sugar, A., III, 69.

502.

formation of, by Aspergillus niger, A., III, 501,

Citric acid, saturated with calcium citrate Clostridium welchii, type A, anti-sera for, solution, solvent action of, on phosphatic fertilisers, C., 188. sodium salt, effect of, on lead excretion in fæces and urine, A., III, 136. refractive index of, and of its mixtures with aluminium nitrate, A., I, 16. isoCitric dehydrogenase. See under Dehydrogenase. Citronellal, reaction of, with magnesium benzyl chloride, A., 11, 218. N-Citronellylethylenediamine, A., II, 366. Citrus fruits, peroxidase from, A., Ill, 856. pulp, soluble solids in, A., III, 315. vitamin-P activities of, A., III, 676. Citrus juices, determination in, of degree of concentration, C., 133. of peel oil, C., 133. Citrus limetta, bitter principle of, A., III, 316. Citrus trees, growth of, in relation to pH, A., III, leaves, affected with mesophyll collapse, A., IÍI, 515. determination in, of sulphur, from sulphur applications, C., 40. wood of, constituents of, A., III, 444. β -cycloCitrylideneacetic acid, A., II, 262. Clamp, for aseptic anastomosis in gastrointestinal surgery, A., III, 742. Clausius' principle, A., I, 62. Clavacin, effect of, on staphylococcal toxin, A., III, 76. Clavatin, derivatives of, A., II, 376. effect of, on enzymes, A., III, 764. Clays, analysis of, C., 16. thermal, C., 114. ball, testing and classification of, C., 114. casting properties of, C., 114. felspathic, Wyndham, Southland, A., I, 208. kaolinitic, electrochemistry of, A., I, 60. mineral, detection of, in Iowa and New England soils, A., I, 72. electrochemistry of, A., I, 60. montmorillonite, electrochemistry of, A., I, reaction of, with vitamin-A, A., II, 192. Spanish, analysis of, by X-rays, A., I, 72. Climacteric, cellular respiration in, spectroreductometry of, A., IIÎ, 811. Climate, at Davos, in relation to thrombosis and pulmonary embolism, A., III, 11. disease and, A., III, 817. Clinoenstatite, relation of, to enstatite-diopside, A., I, 295. Clocks, laboratory timing, C., 104. Clorarsen, treatment with, of syphilis, A., III, Clostridium, culture media for, A., III, 562. growth-substance requirements of, A., III, 146. Clostridium acetobutylicum, enrichment of, with wheat mash, A., III, 73. Clostridium acidi-urici, nutrition of, A., III, Clostridium botulinum in Calcutta soils, A., III, 222.Clostridium butylicum, pyruvic acid fermentation by, A., III, 845. Clostridium lostridium pasteurianum, tolerance of, A., III, 844. salt and sugar Clostridium perfringens, infection by, antitoxic immunity in, A., III, 298. treatment of, with homosulphonamides, in mice, A., III, 606. Clostridium tetani, growth requirements of, A., III, 371. metabolism of, A., III, 222. Clostridium thermoaceticum, fermentation by, carbon dioxide in, A., III, 772. Clostridium thermosaccharolyticum, nutrition of, A., III, 562. Clostridium welchii, detection of, in wounds, A.,

III, 846.

infections with, A., III, 205, 829.

polysaccharide of, A., III, 846.

toxigenicity of, A., III, 507.

treatment of, with penicillin, A., III, 53.

with sulphonamides, A., III, 53.

washed, pathogenicity of, A., III, 436. Cloud-chamber, at 10,000 ft., cascade showers and nuclear disintegrations in, A., I, 139. high-pressure, C., 44. Wilson, automatic, C., 205. Clover, polyploidy in, colchicine-induced, A., 1II, 381.
white. See Trifolium repens. Clymenella, anterior regeneration in, abuda resulting from implants in, A., III, 318. Coagulase, formation of, by staphylococci, A., III, 698, 840. Coagulation, effects of substances producing, A., III, 431. isothermal, of non-colliding particles, A., I, 280. of blood. See under Blood. Coal, analysis of, float-and-sink, double vessel for, C., 67. proximate, C., 17, 67. bird's-eye, New Zealand, A., I, 72. bituminous, surface oxidation of, apparatus for determination of, C., 16. caking power of, coking index as measure of, C., 68. combustion of, catalytic, C., 67. crucible swelling test for, C., 17. deposits of, Kuznetzk Basin, gas accumulations in, A., I, 296. determination in, of ash, C., 17. of ash and water, C., 67. of carbon and hydrogen, C., 114. of carbonates, Č., 114. of fluorine, C., 161. distillation products of, determination in, of tar acids, C., 164. fluorine in, C., 161. hydrogenation of, products from, determination of admixtures in, C., 17. oxidation of, from permanganate values, C., plastic characteristics of, C., 68. preparation of, for analysis, C., 67. sampling of, water losses in, C., 114. sub-bituminous, determination in, of volatile matter, C., 67. Coal dust, determination in, of carbon dioxide, C., 8, 61. Coal tar. See under Tar. Coalescence in liquids and solids, effect of absorbed layers on, A., I, 199. Coatings, electroplated, adhesion tests for, C., 113. metallic. See Metals, coatings of. Coating compositions, galvanic, testing of, C., 103. Coats' disease, A., III, 404. Cobalt, disintegration of, A., I, 263. in mine waters, A., I, 46. isotopes, radioactive, disintegration of, A., I, γ-rays from, energy of, A., I, 76. Cobalt alloys with antimony, A., I, 170. with antimony and iron, A., I, 244. Cobalt bases, interchange of hydrogen in, with deuterium oxide, A., I, 19. Cobalt nitroso-pentammine salts, magnetic properties and structure of, A., I, 219. chloropentammine, Cobaltic velocity reaction of, with hydroxyl ions, A., I, 252. Cobalt compounds, complex, tervalent, magnetochemistry of, A., I, 4. content of, in organs of healthy and bush-sick sheep at Glenhope, New Zealand, A., III, 420. deficiency of, cobaltised salt for prevention of, in sheep, A., III, 750. development of, in sheep, A., III. 198. effect of, on work performance under anoxia, A., III, 630.

Cobalt salts, effect of, on blood, growth, repro-

duction, and urine of rats, A., III, 352. Cobalt chloride, catalytic decomposition of

diazonium salts with, A., II, 96.

Cobalt, halides, spectra of, crystalline and gaseous, A., I, 116.
periodates, A., I, 90.

perniobate, lattice constants of, A., I, 195. monoxide, compound of, with sodium oxide, A., I, 206.

Cobaltous compounds, complex, magnetic susceptibility of, A., I, 101.

Cobalt organic compounds :--

Cobalt bisnicotinylacetonate, A., II, 377. mercurithiocyanate, crystal structure of, A.,

molybdates, complex, A., I, 292.

Cobaltic tridiguanidinium salts, racemisation of, A., I, 19.

Cobaltons disguanidinium hydroxide and sulphate, A., I, 89.

Cobalt detection and determination :---

detection in, of nickel, C., 163. detection of, in presence of iron, nickel, and zinc, C., 162.

detection and determination with 2-nitroso-1-naphthol, C., 163.

determination of, in nickel, colorimetrically, C., 15.

in nickel salts, C., 67.

in presence of cadmium, copper, nickel, and zine, C., 154.

in unsintered carbides, photometrically, C., 163.

Cobalt ores, Ural, A., I, 47.

Cobra venom. See under Poisons.

Cocaine, anæsthetic action of. See under Anæsthetics.

effect of, on urinary excretion of phenol, A., III, 555.

Cocarboxylase, determination of, in biological material, A., III, 672.

effect of, on fungal growth, A., III, 290. hydrolysis of, by wheat phosphatase, A., Ill,

hydrolysis and synthesis of, by liver tissue, in vitro, A., III, 347.

in urine, A., III, 269.
protein systems with, relation between prosthetic group and protein in, A., III, 431.

Cocarboxylase phosphatase. Sec under Phosphatase.

Coccidia, avian, action of sulphaguanidine on, A., III, 277.

Coccidiosis in chickens due to Eimeria brunetti, A., III, 622.

Cockroaches, control of, insecticides for, C., 139. See also Blattella germanica and Periplaneta americana.

Cocoa, determination in, of fibre, froth dispersion in, C., 132.

Cod, grey, quality testing of, C., 180.

Cod-liver oil, effect of, on appetite and activity of rats on corn diet, A., III, 601.

on chicks, A., III, 128.
external use of, A., III, 215.
fresh or rancid, effect of, on vitamin-E
deficiency, A., III, 49.

toxicity of, for chicks, A., III, 424.

vitamin-D from, effect of, on phosphatase of rachitic infants, A., III, 488. Cod oils, testing of, C., 25.

Codecarboxylase, distribution and preparation

of, A., III, 765. Codeine, structure of, A., I, 195.

Cœliac disease. See under Diseases. Co-enzyme I, chick tissues, effect of nicotinic acid intake on, A., III, 547.

heteroCoerdianthrone, photo-oxidation of, A., II,

Coffee, roasted, determination in, of caramel,

C., 180. Coffee extracts, determination in, of caffeine,

C., 132. effect of, on enzymic activity, A., III, 657.

Cohesion, in liquids and solids, effect of adsorbed layers on, A., I, 199.

Cohesion constants, van der Waals', A., I, 219. Coke, cracks and inclusions in, studied by X-rays, C., 17.

determination in, of ash and water, C., 67.

Coke, low-temperature, determination in, of volatile matter, C., 67.

samples, preparation of, C., 115. strength of, determination of, C., 17. Colchicine, A., II, 314.

derivatives, antimitotic action and constitution in, A., II, 48; III, 92.

effect of, on bacteria, A., III, 295. on cell division in pollen, A., III, 231. on enzyme action, A., III, 288.

on pituitary-induced ovulation in frogs, A.,

on plant growth, A., III, 381. c-mitotic action of, A., III, 381.

polyploidy induced in plants by, A., III, 85, 313 tetraploidy induced by, in plants, A., III,

380. treatment with, in glycerin or in water, A.,

III, 231. Colchicum, mitosis in, effect of acenaphthone and colchicine on, A., III, 381.

susceptibility of, to colchicine, A., III, 781. Cold, dry. treatment with, apparatus for, A., III,

Colds, common, air-borne infection and, A., III,

treatment of, with vitamin-A and -D, A., III, 671.

Colemanite, structure of, A., I, 270.

Coleus, leaves, effect of growth substances on, A., III, 86.

yellow, transpiration of, effect of dusts on, A., III, 227,

Colias chrysotheme, hybridisation in, A., III, 388. Colitis, ulcerative, streptococci in fæces in, A.,

III, 77. toxic factor in tissues in, A., III, 507. vitamin-A absorption in, A., III, 412.

Collagen, acetylation and methylation of, A., II, 283.

as suture material, A., III, 349.

reaction of, with formaldehyde, A., II, 356. Colletotrichum indicum, biology and pathogenicity of, A., III, 613.

Colliculus, inferior, auditory and cutaneous sensibilities in, integration of, A., III, 581,

Collodion, membranes. See under Membranes. particles, agglutination of, microscopy of, in protein systems, A., III, 779.

sections coated with, staining of, A., III, 93. Colloids, adsorption by, effect of non-electrolytes

on, A., I, 36. charge and stability of, A., I, 36, 83. congulation of, chain-like aggregates formed

in, A., I, 62. electrical conductivity of, A., I. 13.

lyophilic, dispersion and electrical conductivity of, A., I, 14.

xerogels, anisotropy of, A., I, 247. lyophobie, ionic exchange on, A., I, 13.

mixed, boundary anomalies and electro-phoresis in, A., I, 202.

prophylactic effect of, on mouse skin painted with carcinogens, A., III, 416.

structure of, electron diffraction and electron microscopy of, A., I, 173. study of, at low temperatures, A., I, 279.

Colloidal aerosols, research on, A., I, 59. dispersions, adsorption by, of water vapour,

A., I, 36.

laminar, A., 1, 247. electrolytes. See under Electrolytes.

gases. See under Gases. gels, freezing of, A., I, 174.

opacity changes in, during setting, A., I, 36. optical properties of, A., I, 173. photochemical reactions in, A., I, 132. structure of, A., I, 173.

and double refraction, A., I, 173. thixotropic, pH of, A., I, 84.

hydrosols, positive, Burton's rule for, A., I, 13. particles, anisotropy, shape, and size of, A., I, 172.

scattering by, of X-rays, A., I, 247. sols. See Colloidal solutions.

Colloidal solutions, bound water in, A., III, 307. coagulation of, by electrolytes, opacity changes during, A., I, 248.

molecular form, solvation, and viscosation of, A., I, 84. spectra of, absorption, ultra violet, A., I,

suspensions, filtration of, theory of, A., I, 13. lyophobic, anomalous flow and sedimentation volume in, A., I, 14.

plastic, consistency of, A., I, 248.

viscosity of, A., I, 60.

Coloboma, of eye lids. See under Eyes, lids of. of optic nerve. See under Nerves, optic.

Colon. See Intestines, large.

Colorimeters, (P.), C., 149. colour measurement with, C., 149.

photo-electric, C., 201.

sample holder for, (P.), C., 46. Colorimetry. See Analysis, colorimetric.

Colostrum, carotene and vitamin-A values of, from high-grade cows, A., III, 602. vitamin-A content of, effect of vitamin-A-rich

diet on, in dairy cows, A., III, 486.

in sheep, A., III, 824.
Colour, animal. See under Animals.
concept of, A., III, 462.

constitution and, A., II, 97

field of, psychogenic, A., III, 586. genetics of, and hair pigmentation in

greyhounds, A., III, 91.

measurement of, with colorimeter and tintometer, C., 149.

mixtures of, formula for blue % determination in, for dichromats, A., III, 586.

of small objects, A., III, 585. preservation of, solution for, C., 76. production and intensity of, C., 78. psychophysics of, A., III, 804.

recognition of, A., III, 462. report on, C., 46.

sensations of, synthesis of, excitatory and inhibitory processes in, A., III, 804.

Colour-blindness, distribution of, among men in Great Britain, A., III, 25.

frequencies of, theoretical, A., III, 462. test for, A., III, 25.

Ishihara, A., III, 531.

total, of hysterical origin, A., III, 336. women relatives of subjects with, A., III, 405.

Colour filters, yellow glass, C., 46. Colour photography. See under Photography, Coloured compounds. See under Compounds. Coloured solutions. See under Solutions.

Colpoda duodenaria, nutritive requirements of, Â., III, 143.

Columbite containing tantalum, A., I, 112. Combustion, boats for, (P.), C., 49.

slow, theory of, A., I, 285. theory of, A., I, 64.

Combustion analysis. See under Analysis. Complement, A., III, 304.

high-titre, production and preservation of, A., III, 164.

human, A., III, 9. preserved, A., III, 164.

samples of comparison of, A., III, 220. See also under Blood.

Compounds, coloured, spectra of, absorption, A., I, 211.

complex, spectra of, A., I, 265. macromolecular, A., II, 3, 8.

chain and network, molecular orientation in, A., I, 29, 125,

constitution and viscosity of, A., I, 14. mol. wt. of, from infra-red ray scattering, A., I, 248; C., 196.

solubility and swelling of, A., I, 14. structure of, A., I, 146.

viscosity of solutions of, A., I, 202. and micro-molecular, macrothermal properties of, A., I, 56.

molecular, of quinhydrone type in solution, A., II, 373.

polycyclic, having an angular methyl group, new route to, A., II, 190. ompound E. See II-Dehydro-17-hydroxy-Compound E. corticosterone.

Compressibility, adiabatic, of aqueous ionic solutions, A., I, 81. Compton effect, hole theory and, A., I, 74. in crystals, and in free atoms, A., I, 114. Concentration gradients, measurement refractometrically, C., 43. Conception, prevention of, A., III, 811. Concrete, determination of, C., 163. mixers for, effectiveness of, C., 114.

Concretions, formation of, A., I, 91. Concussion, abdominal. See under Abdomen. cerebral. See under Cerebrum.

Condensation, A., II, 120, 211, 213, 320, 322. temperature of, determination of, C., 202.

o-Condensations, oxazole or iminazole formation from, A., II, 146.

Congo-red, toxicity of, effect of heparin on, A., III, 164. Conifers, Rocky Mountain, water requirements

of, A., III, 81. hydrochloride, crystals. Conline

properties of, A., I, 100.
Conjunctivitis, from are welding, ultra-violet light intensity producing, A., III, 103.

gonococcie, neonatal, prevention against, with sulphathiazolo, A., III, 828. treatment of, with sulphonamides, A.,

III, 725. of allergic origin, A., III, 649. vernal, ariboflavinosis as cause of, A., III, 529.

See also Keratoconjunctivitis. Constipation, duo to biliary tract disorders, A.,

III, 257. due to megacolon, surgical treatment of, A.,

III, 34. treatment of, use of bran in, A., III, 412.

Constitution, adsorption and, A., I, 123, 277. antiplasmodial action and, A., II, 355. colour and, A., II, 97. molecular volume and, A., I, 238. physical properties and, A., I, 53.

tanning effect and, A., II, 6. Containers, glass, polariscope examination of sections of, C., 149.

membrane, water-vapour permeability of, C., 120.

Contramine, treatment with, of chicken-pox and herpes, A., III, 62.

Convolvulus arvensis, food reserve depletion and synthesis in, A., III, 514.

roots, organic reserves in, A., III, 442.

Convulsions, during anæsthesia. See under Anæsthesia.

electrical, influence of drugs on threshold for. A., III, 102.

epileptiform, due to pyridoxine deficiency in swine, A., III, 270.

with calcified adrenals, due to hypoglycamia, A., III, 102.

motor management of, cor conduction and, A., III, 645. cortical impulse

periodic, with hyperventilation syndrome, A., III, 399.

strychnine. See under Strychnine. treatment of, electrical, A., III, 102.

Cooking utensils, porcelain-enamelled, solubility test for, C., 114.

Cooperia pedunculata, alkaloids of, A., III, 708.

Co-ordination, covalency and, A., I, 119.

valency and, A., I, 98. Copepod, reaction of, to light, A., III, 260.

Co-polymerisation, A., I, 253. in systems of three or more components, A., I,

224. Copper, crystals, corrosion of, by mercury and

nitric acid, A., I, 255.

cuprous-oupric potential of, in sulphate solutions, A., I, 156.

diffusion constant of, in aqueous sulphuric acid solutions of copper sulphate, A., I,

diffusion of, in aluminium, A., I, 150. into silver sulphide, isotope enrichment by,

A., I, 230. passification of, anodic, in sodium hydroxide solution, A., I, 226.

photo-electric threshold of, A., I, 114.

Copper, potential of, in copper sulphate solutions, A., I, 39.

temperature coefficient of, A., I, 156. strip, single-texture, directional characteristics of, A., I, 7.

Copper alloys, determination in, of silicon, C.,

electrical resistance of, A., I, 86.

hardness of, A., I, 10.

with aluminium, ageing of, A., I, 11. with aluminium and chromium, A., I, 57.

with aluminium, iron, and nickel, magnetic properties of, A., 1, 277.

with aluminium and manganese, electrical properties of, A., I, 11. with antimony and nickel, analysis of, C., 11.

with beryllium, α - $(\alpha + \gamma)$ phase in, A., I, 198. use of, in instrument design, C., 146.

with gold, spectrum of, X-ray, A., I, 54. with iron and nickel, dissociation of, A, I, 54,

244. with iron and silicon, equilibrium of, A., I,

220.with manganese, X-ray structure of, A., I,

with nickel, passivity in, A., I, 198. with nickel, palladium, and platinum, catalysis by, A., I, 108.

with palladium and with platinum, catalytic action of, A., I, 205.

with tellurium, determination tellurium, C., 160.

Copper compounds, deficiency of, in cattle, death from, A., III, 352.

requirement and metabolism of, for young women, A., III, 420.

Copper perchlorate, standard solutions of, stability of, C., 93.

chromate, basic, ammine of, A., I, 182. oxides, solubility products of, A., I, 221. phosphides, preparation of, A., I, 255.

sulphides, mineral, self-diffusion in, A., I, 135. Cupric salts, complex ion formation of, in solutions with chloride ions, A., I, 249.

Cupric azide, complex compounds of, A., I, 182, 290.

solubility hydroxide, of, in sodium hydroxide, A., I, 221.

oxide, compounds of, with sodium oxide, A., I, 206.

sulphate, preparation of, A., I, 181. solution of, with nicotine sulphate, as anthelmintic for lambs, A., III, 681.

sulphide, precipitated, crystal structure of, A., I, 54.

reaction of, with ferrous sulphide, A., I, 133.

Cuprous chloride, regeneration of acid solutions of, A., I, 67.

fluoride, spectrum of, emission, A., I, 76. oxide, electrical conductivity and Hall effect in, A., I, 7.

titration of, with cerie sulphate and with permanganate, C., 5.

sulphide, precipitated, crystal structure of, A., I, 54.

reactivity of, effect of defect structure on, A., I, 43.

thiosulphates, complex, A., I, 22.

Copper organic compounds :-

Copper bisnicotinylacetonate methiodide, and its beryllium complexes, A., II, 377.

bisnicotinylacetone α-bromocamphor-πsulphonate, A., II, 377. nicotinylacetonate, A., II, 377.

phenyl tripyridine, A., II, 27.

Cupric sulphate, compounds of, with pyridine, A., II, 233.

Copper detection, determination, and separation :-

analysis of, and its alloys, spectrographically, C., 3.

detection of, C., 57. with phenylglycine, C., 4.

determination in, of gold and silver, C., 5. determination of, fluoro-iodometrically, C., 3. in alloys, with antimony, volumetrically, C., 4.

Copper detection, determination, and separ-

ation :determination of, in antimony, babbitt metal and tin, C., 3.

in babbitt metal, C., 4.

in cast iron, by micro-electrolysis, C., 58. in cast iron and steel, C., 105.

in copper and zine flotation concentrates, photometrically, C., 58.

in gold, spectroscopically, C., 59. in organic materials, C., 147.

in potassium cyanide solutions by potentiometric titration, C., 4.

in presence of cadmium, cobalt, nickel, and zinc, C., 154.

in presence of iron, C., 3. polarographically, C., 4.

in presence of oxidising agents, C., 111. in silumin, spectrochemically, C., 61.

smelting-plant materials, spectrographically, C., 59.

in steel, electrolytically, C., 3.

in zine alloys, polarographically, C., 57.

volumetrically, C., 4. with dithizone, C., 4.

determination and separation of, in cadmium and copper quinaldinates, C., 154. with hydroxyquinoline, C., 4.

separation of, from nickel, C., 105. from uranium, C., 105.

Copper ores, Australian, A., I, 72. flotation concentrates of, determination in, of

copper, C., 58.

Copper powder, effect of heating on, and its mixtures with tin powder, A., I, 180. heated, catalytic action of, A., I, 180.

sintering of, A., I, 22. Copper wire, electrolytic solution pressure of, under strain, A., I, 178.

thickness of tin-lead alloy coatings on, C. 157.

Copro I ester haem, a-hydroxy-, benzoyl derivative, A., II, 382.

Coproporphyrin, determination of, in urine, C.,

Coproporphyrin I, dihydroxy-, dibenzoyl derivative, tetramethyl ester, A., II, 382. Coprosterol, formation of, mechanism of, in vivo,

A., III, 130.

Cor pulmonale, chronic, A., III, 14.

Coramine, effect of, on growth of Lactobacillus arabinosus, A., III, 506.

Cordierite, crystals, from glass furnace, A., I, Horns Nek, Transvaal, A., I, 91.

Coreopsis grandistora, pigments of, A., II, 27Ô.

Cork, C., 140.

determination in, of glycerol, C., 140. Corn, sweet, polysaccharides of, A., III, 784. Corn oil, oxidation of, by bacteria, A., III,

845. Corn starch. See Starch, maize.

Coronadite, relation of, to cryptomelane and hollandite, A., I, 135.

Coronene, compound of, with s-trinitrobenzene, A., I, 268.

Corpus callosum, A., III, 645.

Corpus luteum, action on, of prolactin and testosterone in rats, A., III, 344.

degeneration of, in pregnant vitamin-E-deficient rat, A., III, 466.

formation of, effect on, of progesterone in rats, A., III, 411.

Corpus luteum extract, administration of, pregnancy prolongation and excessive feetal

development after, A., III, 739. Corpus uteri. See Uterus. Corpuscies, blood. See Blood-corpuscies.

interaction of, representation of, by means of spin I particles, A., I, 211.

Corrosion, depolarisation of cathodes in, A., I, 105.

electrochemical mechanism of, A., I, 205. overpotential and, A., I, 64. See also Rust.

Corticotropin, obtained by ultra-filtration of pituitary extracts, A., III, 466.

Cortin, effect of, on working capacity of adrenalectomised animals, A., III, 187. material like, in urine, adrenal gland as source of, in monkeys, A., III, 730. extraction of, A., III, 731.

Corundum, Ural, colour of, A., I, 47. Corydalis thalictrifolia, alkaloids of, A., II, 87. Corydora paliatus, pituitary of, A., III, 570. Corynantheine, spectrum of, absorption, ultra-

violet, A., I, 191.

Corynanthine, spectrum of, absorption, ultraviolet, A., I, 191.

sympathicolytic activity of, effect of acetylation on, A., III, 832.

Corynebacterium, isolation of, agar-less media for, A., III, 74.

metabolism of, A., III, 617. Corynebacterium carbohydrate

detection of, medium for, A., III, 772. with tellurite plates, A., III, 617. epidemiology and pathogenicity of, A., III,

growth factor for, in liver, A., III, 507. virulent, action of sulphonamides on, A., III, 133.

Corynocarpus laevigata, glucoside of. Karakin.

Coryza, infectious, treatment of, with sulphathiazole in chickens, A., III, 358. See also Rhinitis.

Coscinium fenestratum, alkaloids of, A., III, 156.

berberine content of, A., II, 87. Cosmetics, Kreis test with, C., 137.

Cosmical number, evaluation of, A., I, 115. Cosmos, effect on, of thiamin, A., III, 782. tetraploidy in, induced by colchicine, A., III, 38Õ.

Cotton, analysis of, in mixtures with viscose rayon, C., 71.

determination of, in asbestos textiles, C., 169. fireproof, use of, in bacteriology, A., III, 144. Cotton plants, flowers, pigments of, A., III,

384. leaves, hydration in, A., III, 377. mineral element partition in, A., III, 377. polyploid, colchicine-induced, A., III, 85. upland, green lint and wax content of, A., III, 706.

See also Gossypium.

Cotton workers, illness in, caused by A. cloaca, A., III, 73.

Cottonseed, pigments of, A., III, 444, 784; C., 122.

Cottonseed flour, protein nutritional value of, and its value as supplement to wheat flour, A., III, 749.

Cottonseed oil, analysis of, C., 171. determination in, of fatty acids, C., 74.

Coumaran-1-one, 6-bromo-4-hydroxy-, A., II,

o-Coumarie acids, formation of, from o-hydroxyaldehydes, A., II, 161.

Coumarin, 4-hydroxy-, anticoagulant activity and structure of, A., III, 635. condensation of, with aβ-unsaturated ketones, A., II, 344.

8-4-hvdroxy-, glucoside of, and its tetra-acctate, A., II, 345.

5-hydroxy-, derivatives of, transformations of, A., II, 270.

Coumarins, natural, A., II, 167. synthesis of, from o-hydroxyaryl alkyl ketones, A., II, 161.

from o-hydroxyphenylbenzyl ketones, A., II, 344.

Coumarins, 4-hydroxy-, and their esters and glucosides, A., II, 344. bromo-derivatives of, A., II, 303.

condensation of, with aldehydes, A., II, 166.

synthesis of, A., II, 165. 5-hydroxy-, azo-dye formation by, A., II, 270. Coumarin-3-carboxylic 6-monoacid,

6:8-di-bromo-, A., II. 99. 3-7'-Coumarino-4'':3''-2':3'-benzpyranylcoumarın, 4-hydroxy-, glucoside tetra-acetate,

A., II. 345. Coumarin-y-pyrones, A., II, 200. 4-Coumarinyleoumarino-4'-3'-2:3-1:4-

benzpyran, 4'- and 7-hydroxy-, and their derivatives, A., II, 166.

Coumingine hydrochloride, potency of, relation to environmental temperature, A., II,

Counters, cell, interferometric measurement of thickness of, C., 202.

coincidence proportional, phase effects with, A., I, 262.

electric, C., 56.

electron, electron multipliers as, C., 103. Geiger, for small-energy electrons, C., 205.

soft-ray, C., 44.

Geiger point, action of, A., I, 188.

Geiger-Muller, containing organo-metallic compounds, C., 45. miniature, C., 146.

self-quenching, plateau characteristics of, A., I, 25.

solid-angle, C., 205. photon, C., 201.

sensitivity of, C., 201.

Covalency, co-ordination and, A., I, 119.

Cover glasses, plastic substitutes for, C., 201. Covitamins, A., III, 425.

Cows, beef, pasture-bred, conception rate in, during controlled breeding season, A., III.

dairy, digestion of nutrients by, effect of fat on, A., III, 484.

vitamin-C synthesis by, A., III, 753. lactating, feeding of, standard equations for, A., III, 418.

ovulation control in, A., III, 537.

Cow peas. See under Peas.

Cozymase, destruction of, in tissues during shock, A., III, 720. displacement of, A., III, 764.

Crabs, blue. See Callinectes sapidus.

sand-. See Emerita talpoida. Cranberries, polyploidy colchicine, A., III, 231. induced by

Cranberry plants, blossom induction of, A., III

Cranio-facial complex, for determining familial similarity, A., III, 389.

Cranio-pharyngeal canal, nerve fibres within A., III, 629.

Cranium. See Skull.

Cream, salt-treated, testing of, hydrochloric acid, poisoning during, C., 131.
Createse, A., III, 366.

Creatine, content of, in muscle of rats on choline

containing diet, A., III, 723. determination of, in animal tissues, C., 29. excretion of, in animals on diet deficient in vitamin-E and factor essential for guinea-

pigs, A., III, 548. excretion and transformation of, effect of

protein metabolism rate on, in rats, A., III, 356.

formation of, from ammonium carbonate and sarcosine, A., III, 366. metabolism of. See under Metabolism.

role of, in cell growth and wound healing, A., III, 660.

synthesis of, l(-)-methionine specificity in, A., III, 129.

Creatine anhydrase. See under Anhydrase. Creatinine, determination of, colorimetrically,

C., 140. in plant extracts, C., 189.

in presence of oxidisable substances, C., 141. transformation and excretion of, effect of protein metabolism rate on, in rats, A., III, 356.

Creatinine oxidase. See under Oxidase. Creatinuria, due to tri-o-cresyl phosphate poisoning, effect of vitamin-E on, A., III, 213.

Cresols, determination of, in air, C., 22. reaction of, with trimethylgallazide, A., II, 336.

Cresols, nitro-, polarography of, A., I, 129. o-Cresol, condensation of, with formaldehyde in alkaline solution, A., II, 14. oxidation of, by alkaline fusion, A., II, 47.

o-Cresol, dinitro-, determination of, C., 138.

m-Cresol, condensation of, with tert.-butyl chloride, A., II, 367.

determination of, in cresylic acid, C., 168. p-Cresol, 2:5- and 2:6-dibromo-, and 3-chloro-2:5-dibromo-, A., II, 43.

o-, m-, and p-Cresols, detection of, C., 70.

p-nitrobenzoates of, A., II, 294.

toxicity of, for experimental animals, A., III, 552.

o-Cresol-3:5-dialdehyde, and its dioxime, A., II, 14.

m-Cresolsulphonephthalein, ionisation constant of, A., I, 126.

Cresylic acid, determination in, of m-cresol, C.,

Cretinism, induced by thiouracil in rats, A., III, 339.

pregnancy occurring in, A., III, 26. Cricetulus griseus, meiosis in, A., III, 236.

Crime, medical and social factors in, A., III,

Crocodile. See Crocodilus niloticus.

Crocodilus niloticus, food of, A., III, 742.

Crotaline, structure of, A., II, 87.

Croton oil, injection of, shock due to, A., III, 61,

Crotonaldehyde, action on, of ammonia, A., II, 380.

condensation of, with β -methylvinyland vinylacetylenes, A., II, 177. derivatives of, A., II, 183.

oxidation of, A., II, 3. 4'-Crotonamidodiphenylsulphone, 4-amino-. 4-acetyl derivative, A., II, 131.

Crotonic acid, crotyl ester, A., II, 4. cyanomethyl ester, A., II, 213.

Crotonic acid, B-chloro-, cyanomethyl ester, A., II, 213.

a-cyano-, methyl ester, A., II, 290. Crotylphthalimide. See a-Methylallylphthalimide.

Crucibles, glass, sintered, filtering, C., 95. Gooch, ground- in sintered glass, C., 145. Gooch and porous-type, use of filter-paper discs with, C., 95.

sintered pyrex and soft glass sections in, C., 95.

Crushing, injuries from, ætiology of renal failure after, A., III, 37.

syndrome of, in relation to that of burns and other traumatic wounds, A., III, 17. Cryolite, dissociation and solubility of, in aqueous

salt solutions, A., I, 12. heat of formation of, A., I, 86.

Cryometers, C., 47.

Cryostat, C., 47. Cryptogams, fats of, in relation to phylogeny, A., III, 219.

Cryptomelane, relation of, to coronadite and hollandite, A., I, 135.

Cryptorchidism, treatment of, with chorionic and pituitary gonadotropin and testosterone, A., III, 190.

Cryptoxanthin, storeochemistry of, A., II, 219. Cryptozoites, malarial, A., III, 70.

Crystals, absorption factor for, effect of size on, A., I, 167.

analysis of, by X-ray diffraction, C., 146. atomic radiating sources in, A., I, 140. bending of, stress development in, A., I, 55. binary mixed, configurations of, A., I, 195. breadth of Debye-Scherrer lines in, A. I,

chemistry of, and geochemistry, A., I, 136. cubic, diffraction of light from high-frequency

elastic waves in, A., I, 272. vibrations in, A., I, 144.

definition of, A., I, 143.

distorted, aggregates, X-ray diffraction by, A., I, 143.

electrodeposited, formation and growth of, A., I, 106.

equilibrium form of, Wulff's law for, A., I,

growth of, from solutions, A., I, 101. imperfect, A., I, 269.

ionic, lattice energy of, A., I, 269. ionic and molecular rotations in, A., I, 5.

diamagnetic susceptibility of, A., I, 121.

Crystals, lattices, arrangement of double molecules on, A., I, 30. Bravais, atomic vibration in, A., I, 144. energy coefficients of, A., I, 102. hexagonal close-packed, vibrations of, A., imperfections in, A., I, 167. intracrystalline forces in, A., I, 239. light scattering and molecular rotation in, A., I, 165. matrix theory of correlations in, A., I, 239. order propagation in, A., 1, 6. spectra of, vibration, A., I, 143. thermodynamics of, A., I, 219. two-dimensional, with four components, A., I, 6. vibrations of, A., I, 144. lattice constants of, A., I, 143. light scattering by, A., I, 168. and Debye's heat waves, A., I, 272. liquid, A., I, 272. molecules and X-rays, A., I, 269. non-polar, fusion in, A., I, 255. nuclear formation of new phases in, A., I, 196. organic, growth of, A., I, 79, 99, 240. orientation of, A., I, 79. orthorhombic, dispersion of anisotropy in, A., I, 272. photoactivation of, A., I, 12. physics of, A., I, 167, 239. retrograde transformation in, A., I, 100. semi-conducting, photo-electric effect in, A., I, 165. space-groups in, character tables of, A., I, 194. spectra of, frequency, A., I, 6, 144. luminescence, A., I, 141. Raman, A., I, 142. statistics of, A., I, 143. strength of, theory of, A., I, 168. structure of, Raman effect and, A., I, 165. X-ray analysis of, A., I, 193, 238. structure and thermal properties of, A., I, 55. triclinic, unit-cell resetting of, A., I, 119. Crystal-violet, bactericidal and bacteriostatic action of, A., III, 560. spectrum of, absorption, A., I, 96. Crystallisation apparatus, adapted for solubility determination, G., 197. Crystallography, X-ray, equipment for, C., 44. Cucumbers, seeds, succinic dehydrogenase from, A., III, 364. Cucumis, polyploids in, A., III, 381. Cucurbita, polyploidy in, fruit development in, A., III, 231. Cucurbita pepo, asparagine and glutamine formation in, A., III, 83. Cucurbitacese, cytology of, in relation to evolution, A., III, 449. Culex, transmission of encephalomyelitis by, A., III, 374. Culiseta, transmission of encephalomyelitis by, A., III, 374. Culture bottles, "Steilbrust," for bacteriology, A., III, 370. Culture media, A., III, 294. for bacteriology, microtechnique applied to, C., 87. tetrathionates in, A., III, 71. Bartel's, A., III, 617. coagulation and sterilisation of, A., III, 71. fluid, aeration of, A., III, 505. for alcohol-preserved tissues, A., III, 220. for colon bacilli, A., III, 562. inspiration of, temperature-time guide for, A., ÎII, 693. Loeffler's, A., III, 617. new, A., III, 693. purification of water for, C., 189. sterilisation of, agar contamination in, A., III, 72. substitutes in, A., III, 693. vegetable, for bacteria, A., III, 144. vitamin content of, A., III, 693. Culture tubes, stoppers for, machine-rolled, C., iso-\psi-Cumenol, 6-amino-, formyl derivative, A., II, 45.

↓-Cumidinediazidocopper, A., I, 290.

4-Cumoquinol, alkyl ethers, synthesis and Cyclanes, ring enlargement in, A., II, 194. structure of, A., II, 44. stereochemistry of, A., II, 372. Cyclanones, reduction of, and their oximes, orientation in, A., II, 299. 1-ethyl ether, and its 4-acetate and 4-propionate, A., II, 44. Cyclic compounds, condensed, synthesis of, A., 1-methyl ether, A., II, 44. Cumulenes, A., II, 124. II, 101. bond system and stereochemistry of, A., I, containing sulphur, A., II, 154. c-mitotic activity and water solubility of, A., 268. III, 382. apoCupreine p-toluenesulphonate, A., II, 293. Cupriethylenediamine as solvent in viscosity Cyclisation, influence on, of n-alkyl groups, A., II, 254. determination, C., 119. Cuprous oxide. See under Copper. Cyclitols, A., II, 219. Curare, as antagonist to acetylcholine, compared Cyclodehydration,. See cycloDehydration. with atropine, A., III, 759. Cyclones, action on, of nitrosoaryl compounds, heterogeneous nature of, and its pharmaco-dynamic properties, A., III, 556. A., II, 55. See 5-△2-cycloPentenyl-5-allyl-Cyclopal. use of, in anæsthesia, etc., A., III, 495. barbituric acid. Cyclotron, principle of, model demonstrating, Curarisation, prolonged, fatal effects of, A., III, C., 103. Curculoinidæ, parthenogenetic, polyploidy in, A., III, 347. Cyclotron targets, A., I, 181. Cymarin, potency of, in relation to environ-mental temperature, A., III, 134. Currants, black, vitamin-P in, A., III, 676, 783. Cushing's syndrome, A., III, 29, 732. Cyperus rotundus, response of, to water levels, relief of, by adrenal adenoma removal, A., III, A., III, 377. Cyprinida, scales, blue pigment fluorocyanine therapeutic observations in, A., III, 252. use of salt injection in, before and after deoxycorticosterone acetate administration, from, A., III, 745. Cyprinodonts, Indian. See Oryzias melastigma. Cyprome ether. See cycloPropyl methyl ether. Cysts, brain. See under Brain. A., III, 340. liver. See under Liver. Cuspidine, in welding slag, A., I, 71. ovarian. See under Ovaries. Cyanamide, detection of, colour reaction for, porencephalic, A., III, 801. C., 70. skin. See under Skin. solvent properties of, A., I, 81. Cyanamides, colour reaction of, A., III, 323. Cyanic acid. See under Cyanogen. Cysteine, activation of uricase by, A., III, 140. determination of, by Vassel's method, C., 92. ssoCyanic acid. See under Cyanogen. effect on, of enzyme from rat liver, A., III, Cyanides. See under Cyanogen. 216. Cyanines, spectra of, absorption, A., I, 96. polarography of, A., I, 284. ψ-isoCyanine, polymerisation of, A., I, 248. production of, from methionine by liver slices, Cyanine dyes, spectra of, absorption, A., I, 141. A., III, 202. Cysteine desulphurase. See under Desulphurase. isoCyanine dyes, photo-sensitising, synthesis of, l-Cysteine hydantoin, A., II, 309. A., II, 237. Cyano-acids, dissociation constants of, A., I, 37. Cystine, as supplement to all-lucerne hay ration Cyanogen bromide, spectrum of, Raman, A., I, for milk production, A., III, 418. determination of, by Vassel's method, C., 92. dietary, effect of, on vitamin- B_4 deficiency in 192. Hydrocyanic acid, adsorption of, by wheat, chick, A., III, 46. C., 186. effect of, on human milk production, A., III, anhydrous, chemical and physical properties of, A., I, 176. 472. on serum-phosphatase and hepatic dye dielectric constant of, A., I, 98. clearance of dogs on deficient diets, A., chromium salt, complexes, polarography of, III, 749. A., I, 40. hydrolysis of, in plant tissues, A., III, 567. cuprous salt, reaction of, with butenyl halides, allylic rearrangement in, A., II, liberation of, from proteins, by acid hydrolysis, 250. A., II, 148. prevention by, of nutritional disturbance of detection of, C., 186. metabolism, A., III, 41. equilibrium of, with ethyl ether, A., II, 71. I-Cystine, metabolism of. See under Metabolism. hydrolysis of, in acetic acid, with mineral Cystitis, post-operative, prevention of, with sulphathiazole, A., III, 55. acid catalysts, A., I, 20. potassium salt, determination of, in copper Cytisus, alkaloids of, A., II, 354. solutions, by potentiometric titrate, C., 4. Cylisus linifolius, isolation from, of anagrine, silver salt, determination of, in electroplating solutions, C., 5. A., II, 354. Cytisus proliferus, alkaloids of, A., III, 568. Cytisus scoparius, alkaloids of, A., III, 568. spectrum of, rotation-vibration, A., I, 235. zinc salt, crystal structure of, A., I, 54. Cyanic acid, carbamato-cobaltic complexes of, Cytochrome, conversion of myoglobin into, A., A., I, 183. III, 100, 330. Cytochrome-c, concentration of, effect adrenalectomy on, in rats, A., III, 589. isoCyanic acid, chromium and germanium salts, A., I, 111. effect of determination of, in top yeast, A., III, 292. Cytochrome-oxidase. See under Oxidase. germanium salt, A., I, 22. isoCyanic acid, chloro-, silicon compounds of, Cytology, handling small objects in bulk for, A., III, 162. A., I, 231. Cyanides, determination of, in cadmiumuse of Feulgen reaction in, A., III, 161. Cytomycosis, reticulo-endothelial. See Histo-plasmosis, Darling's. plating baths, C., 158. detoxication of, in dogs, measured by urinary thiocyanate excretion, A., III, Cytoplasm, gene and, A., III, 519. 214. Cytosine, detection of, colorimetrically, C., 23. effect of, on pharmacological action of adrenaline, A., III, 589. Cyanogenesis, inheritance of, in plants, A., III, 154. Cyanopalladic acid. See under Palladium D. organic compounds. D.B.E., fate of, in body, A., III, 537. Cyanosis, due to sulphhæmoglobinæmia, in pregnancy, A., III, 523. Cyanuric acid, calcium salt, trihydrate, A., II,

Dachshunds, long-haired, inheritance of coat and nose colour in, A., III, 4. Dactylicapnos macrocapnos, alkaloids of, A., II. Dakin-Daufresne solution, preparation of. therapeutics and technique of, alkaline hypochlorites in, A., III, 359.

Dakin's solution, preparation of, apparatus for, C., 44.

Damsel-fly, naiads of, oxygen absorption in, A., III, 458.

Daphnia, populations of, temperature effects on, Å., III, 541.

Daphnia longispina, intersexuality in, temperature effect on grade of, A., III, 158.

Datura stramonium, atropine transference from Solanum lycopersicum, A., III, 154. hyoscyamine synthesis in, A., III, 312.

Daubenionia drummondii, seeds, mannan from, A., III, 856.

Daubreelite, crystal structure of, A., I, 208. Daucus carota, anatomy and growth of, in relation to boron deficiency, A., III, 780.

Davenport, Charles Benedict, and his contributions to physical anthropology, A., III, 629.

Deaf-mutism, congenital, familial, A., III, 105. genetics and inheritance of, A., III, 532.

Deafness, aviator's, A., III, 651.

chronic, progressive, A., III, 586. conductive, chronic, treatment of, with ethylmorphine hydrochloride injection into tympanum, A., III, 727.

treatment of, with radium, A., III, 105. congenital, treatment of, A., III, 532.

due to explosions and gunfire, A., III, 338. due to fibrosis and otosclerosis, prevention of, with fluorine, A., III, 405.

hearing and vestibular function in, in children, A., ĬII, 406.

hysterical, in war, A., III, 806.

nerve-, in pigmentary degeneration of retina, A., III, 183.

progressive, A., III, 806. quinine and salicylate, A., III, 249. simulation of, A., III, 105. traumatic, prevention of, A., III, 806.

treatment of, A., III, 105, 338.

with benzyl cinnamate, A., III, 106. unilateral, simulated, detecting device for, A., III, 184.

See also Ears, Hearing, etc.

De-N-anhydrobydrolycorine, A., II, 175. Debenzylation, catalytic. See under Catalytic. cycloDecadiene, A., II, 159.

 $\beta\delta$ -Deca- $\beta\eta$ -dien- ϵ -yne- $\delta\iota$ -diol, A., II, 178.

Deca- $\gamma\theta$ -dien- ϵ -yne- $\beta\eta$ -diol, A., II, 178. Decahydronaphthalene, cis-9:
monohydrate, A., II, 137.
2:3-dithiocyano-, A., II, 154.
trans-Decahydronaphthalene, cis-9:10-dihydroxy-,

9:10-dinitro-, derivatives of, A., II, 158.

cis- and trans-Decahydronaphthalenes, parachors of, A., I, 167.

cisand trans-Decahydronaphthalenes, 9:10-diamino-, and their derivatives, A., II, 158.

n-Decaldehyde, 2:4-dinitrophenylhydrazone, A., II, 30.

Decane, y-oximino-, A., II, 247.

aκ-dithiol-, A., II, 2. cycloDecane, and its derivatives, A., II, 158. a- and β -cycloDecames, 1:6-diamino-, and their

derivatives, A., II, 158. n-Decane-αω-dicarboxylic acids, A., II, 3. a- and β -cycloDecanediols, dibenzoates, A., II, 137.

cycloDecane-1:8-dione, monoxime of, A., II, 158.

preparation of, from decahydronaphthalene, A., II, 137.

Decan- δ -ol, γ -nitro-, A., II, 247. cycloDecanol, A., II, 137.

Decarboxylase, amino-acid, bacterial, A., III,

bacterium-, specificity of, A., III, 507. histidine, in micro-organisms, A., III, 499. l-lysine, A., III, 839.

l(+)-lysine, A., III, 765. l(-)-tyrosine, from Streptococcus fecalis, A., III, 765.

Deca- $\delta \zeta \theta$ -trien-a-yn- γ -ol, A., II, 177.

Deca- $\gamma\epsilon\eta$ -trien-a-yn- ι -ol, A., II, 177. Dec- β -en- ϵ -yne- $\delta\eta$ -diol, and its bisphenyl- and bis-α-naphthylurethanes, A., II, 178.

Dec-y-en- ϵ -yne- $\beta\eta$ -diol, A., II, 178. Decidua parietalis, human, cytology of, A., III,

Deciduoma, formation of, with deoxycortico-sterone acetate, A., III, 341. persistence of, in mouse, A., III, 592.

secondary, production of, during lactation in rats, A., III, 112.

4'-n-Decoamidodiphenylsulphone, 4-amino-, 4-acetyl derivative, A., II, 131.

8-Decyl-ω-ammo-decylamino-6-methoxyquinoline, 8-ω-amino-, and its meconate, A.,

8-Decylamino-6-methoxyquinoline, S-ω-amino-, and its dehydrochloride, A., II, 56. 8-ω-cyano-, A., II, 57.

8-Decyl-y-aminopropylamino-6-methoxyquinoline, 8-ω-amino-, and its meconate, A., II, 56.

8-Decylaminoquinoline, 8-ω-cyano-, A., II, 57. λ-n-Decyldocosane, A., II, 357.

 β -n-Decyl- β -n-dodecylpropionic acid, and its amide, A., II, 70.

1-n-Decylcyclohexane-1-cyanoacetic acid, ethyl ester, A., II, 17.

1-n-Decylcyclopentanol, 3:5-dinitrobenzoate, A., II, 219.

10-n-Decylphenothiazine, and 3-nitro-, 5-oxide, A., II, 353.

-Decyltridecanol, A., II, 70.

 β -Decyl- Δ^a -tridecenoic acid, ethyl ester, A., II,

y-Decyltridecylmalonic acid, diethyl ester, A., II, 70.

See under Flies. Deer flies.

2-De-ethylphylloporphyrin, methyl ester and its iron salt, A., II, 312.

180Dehydracetic acid, ethyl ester, action on, of nitric acid, A., II, 179.

Dehydrase, serine, A., III, 65. Dehydration, A., III, 357.

experimental, intracellular potassium transfers in, A., III, 325.

post-operative, control and estimation of, A., III, 167. study of, by balance experiments, A., III,

urine secretion during, A., III, 659. cycloDehydration, aromatic, A., II, 10. 42, 130,

Dehydroandrosterone, preparation of, A., II,

trans-Dehydroandrosterone acetate, hydrogenation of, A., II, 229.

Dehydroisoandrosterone sulphate, from male urine, A., III, 344.

Dehydroascorbic acid, assay of, A., III, 674. determination of, in plant tissues, 2:4-dinitrophenylhydrazine, C., 139.

distribution of, in potatoes, A., III, 48. reduction of, enzymic, A., III, 365.

in plant extracts, A., III, 498. transformation of, irreversible, A., III, 127. 7-Dehydroclionasterol, A., II, 341.

7-Dehydroclionasteryl benzoate, acetate, and, A., II, 341.

Dehydrocorticosterone, antifibromatogenie action of, A., III, 590.

11-Dehydrocorticosterone, 17-hydroxy-, effect of, in growth of adrenalectomised rats, A., Ill, 534.

Dehydrogenase, isocitric, biological properties and nature of, A., III, 216.

succinic, from cucumber seeds, A., III, 364. in cancer tissue, A., III, 195.

inhibition of, cellular respiration after, A., III, 273. reduction by, of s-trinitrotoluene, A., III,

138. Dehydrogenation, by anaerobic pathogenic bacteria, A., III, 697.

catalytic. See Catalytic dehydrogenation. Dehydrocyclogeranic acid A., II, 197. 3:4-Dehydrohomocamphor, and its phenylhydrazone, and oxime, A., II, 268.

3:4-Dehydrohomocamphor, 3-bromo-4-hydroxy-, A., II, 268.

4-hydroxy-, derivatives of, A., II, 268.

11-Dehydro-17-hydroxycorticosterone, effect of, on malignant tumour growth in mice, A., III,

Dehydrothalictrifoline, hydrochloride, A., II, 87. Dehydrothio-p-toluidine, A., II, 174.

Delphinium alkaloids, A., II, 175.

Delphinium cardinale, tetraploidy in, induced by colchicine, A., III, 231.

Delphinium consolida, seeds, alkaloids of, A., III, 516.

Delphonine, A., II, 355.

Demerol, A., III, 212. addiction liability to, A., III, 135.

analgesic action of, A., III, 59, 555. and its hydrochloride, A., II, 202. as obstetric analgesic, A., III, 682.

detection of, microscopically, C., 185. determination of, in urine, C., 30. synthesis of, A., II, 272.

use of, in labour, A., III, 496. Dengue fever, in West Africa, A., III, 304. Densitometers, helium, for use with powders, C., 53.

Density, calculation of, from X-ray data, A., I, 238.

determination of, by flotation, C., 143. of solutions of strong electrolytes, A., I,

Dental caries, activity of, effect on, of urea and synthetic detergents in man, A., III, 540.

effect on, of fluorine, A., III, 2. fluoride ingestion in relation to, A., III,

fluorine and, post-war implications of, A., III, 609.

nutritional deficiencies in, in Northern India, A., III, 543.

on Tyneside, A., III, 198. pathogenesis of, A., III, 540.

Dentistry, bacteriological and dietetic study in relation to, in institutional inmates, A., III,

sulphathiazole in, A., III, 207.

sulphonamides in, A., III, 551. surgical, cyclopropane in, for children, A., III, 682.

Dentition, improved, in school children, A., III, 670.

Deoxodiginigenin, and its acetate and hydrate, A., II, 230.

Deoxolumiœstrone, A., II, 230. Deoxyanisoin, chloro-, A., II, 191.

a-chloro- A., II, 129.

Deoxycantharidin, A., II, 376. Deoxycholic acid series, introduction into, of

3-keto-4⁴-conjugated system, A., II, 342. 11-Deoxycorticosterol, activity of, determination of, C., 175.

Deoxycorticosterone, acetate, administration of, resistance to potassium poisoning in rats after, A., III, 340.

use of injected salt in normal and Cushing's syndrome case before and after, A., III, 340.

deciduoma formation with, A., III, 341. effect of, on electrolyte balance and plasma

volume in man, A., III, 340. polyuria induced by, A., III, 535. treatment with, of Addison's disease, A.,

III, 465.

water exchange and, A., III, 407. conversion of, into pregnane-3(a):20(a)-diol, A., III, 28.

effect of, on working capacity of adrenalcctomised animals, A., III, 187.

glucoside, water-soluble, effect of, in adrenal cortex insufficiency, A., III, 187.

glycogen formation under influence of, A., III,

inactivation of, in liver, A., III, 746. lesions produced by, A., III, 14.

β-maltoside, A., II, 123. sexual function and, A., III, 251.

synthetic, antifibromatogenic action of, A., III, 731.

Deoxycorticosterone, treatment with, carbohydrate, salt and water appetite of adrenalectomised rats after, A., III, 340.

1-Deoxy-1-diazo-keto-D-sorbose, tetraacetate, A., II, 214.

its

12-epi-14-Deoxydigoxigenin,

3:12-diacetate, A., II, 343. a-Deoxy- $\beta\gamma\delta\epsilon$ -diesopropylidene-DL-xylitol, Α., II. 179.

Deoxyephedronium sulphadiazine, A., II, 352. Deoxyephedronium sulphathiazole, A., II, 352.

1-Deoxyketo-D-galaheptulose pentaucetate, A., II. 6.

Deoxylutein-I, A., II, 76.

a-Deoxy-D-mannitoI, a-nitro-, A., II, 359. Deoxyribonucleic acid, content of, in tumour cell nuclei, A., III, 196.

Deoxyribosenucleoproteins, distinction of, from ribosenucleoproteins, A., III, 516.

Deoxytetrahydrolycorenine, A., II, 63 Deoxyvomicine, constitution of, A., II, 240.

a-Deoxy-DL-xylitol, A., II, 179.

Depolymerases, for thymus- and yeast-nucleic acids, in normal and neoplastic tissues, A., III, 121.

Depressants, autonomic, therapeutic effects of, in Noble-Collip shock, A., III, 134.

Deproteinisation, C., 193.

Depsides, A., II, 101.

Dermacentor andersoni, virus disease in guineapigs injected with, A., III, 849.

Dermacentor variabilis, paralysis from bite by, A., III, 177.

transmission by, of encephalitis, A., III, 150. of St. Louis encephalitis to mice, A., III,

Dermatitis, atopic, due to amphetamine sulphate and d-amphetamine sulphate, A., III, 760. bullous, fatal, after sulphapyrimidine treatment, A., III, 209.

claims for recovery for, A., III, 215. contact, from hair lacquers, A., III, 557, 836.

from olive oil, A., III, 283. from resin-finished shirts and fabrics, A.,

III, 836.

from service gas mask, A., III, 137.

dhobie mark, A., III, 836. hand, A., III, 836.

industrial, A., III, 283. nail polish, A., III, 283.

prevention of, in turkey poults, A., III, 271. sulphathiazole, A., III, 830.

Dermatology, relation of, to psychiatry, A., III,

therapy in, A., III, 283.

with sulphonamides, A., III, 208, 829. Dermatomyositis, A., III, 642.

Dermatoses, nutritional, in rats, A., III, 421. treatment of, with sulphur in petrolatum, A., III, 681.

for and Dermofluorometer. skin fluorescence measurement, A., III, 171.

Derris, root, extracts of, toxicity of, for mice, A., III, 362.

species, toxicity of, C., 189.

Derris elliptica, roots, constituents of, A., III,

Derris scandens, scandenin from, A., II, 28. Desmotroposantonin, A., II, 77.

l- and dl-Desmotroposantonins, A., II, 55. l- and dl-β-Desmotroposantonins, A., II, 233.

d- and dl- β -Desmotroposantonous acids, A., II, 55, 233.

Desulphurase, cysteine, A., III, 65.

Desulphurisation, mechanism of, A., II, 330. N-Desylarylamines, Leuckart's reaction with, A., II, 348.

Detergency, measurement of, C., 198.

Detergents, bactericidal activity of, against staphylococci, A., III, 560.

determination of, in soap bars, C., 122. precipitation of proteins by, A., I, 224. synthetic, complex formation of, proteins, A., II, 27. with

effect of, in reducing activity of human dental caries, A., III, 540.

Dethiobiotin, resynthesis of, from diaminopelargonic acid, A., II, 382.

Detoxication, prophylactic and therapeutic, A.,

See also Poisons, Toxicity, Toxins, etc.

Deuterium, adsorption of, on nickel plates, A., as indicator, in keto-enolic tautomerism, A.,

II. 34. photo-excitation in, by caesium ions, A., I,

73.

solubility of, in nickel, A., I, 34.

spectrum of, continuous. theory of, A., I,

transamination by means of, A., III, 286. Deuterium carbide, spectrum of, band, A., I, 76.

oxide, determination of, by falling drop method, C., 153.

Deuterocarbonic acid, dissociation constant and pH titration curves of, A., I, 202.

Development, pathology in, A., III, 386.

Devinylphyllochlorin, partial synthesis of, A., II, 312.

2-Devinylphyllochlorin, methyl ester, and its iron salts, A., II, 312.

Dew points, determination of, apparatus for, (P.), C., 152.

Dewberries, citric and isocitric acids in, A., III, 315.

Dextran, molecules, electron microscopy of, A., 1, 271.

synthesis of, by leuconostoc enzyme, compared with starch synthesis by potatophosphorylase, A., III, 432.

Dextrin, determination of, in brewing materials, Ç., 178.

in worts, C., 79.

limit, A., II, 8.

and starch, A., II, 93; A., III. 67.

Dextrocardia, and situs inversus, with rheumatic mitral disease, A., III, 638.

Diabetes, after pancreatectomy, in rats, A., III, 588.

alloxan-induced, A., III, 407, 536.

in dogs, A., III, 340, 652. in rabbits, A., III, 730.

associated with Addison's disease, A., III, 28. treatment of, with testosterone propionate, A., III, 807.

associated with Albright's syndrome, A., III,

associated with menopause, treatment of, with cestrogen, A., III, 32.

bacteræmia complicating, A., III, 297. cancer in, incidence of, A., III, 669.

capillary fragility in, A., III, 457.

effect of vitamin treatment on, A., III, 457. erythroblastosis. ardiac hypertrophy, erythroblastosis, hyperplasia of Langerhans islets, and macrosomia, A., III, 158. cardiac

cause of, A., III, 426. choline excretion in, A., III, 755.

diet in, A., III, 484. effect on, of inflammation, A., III, 275.

pituitary growth hormone,

depancentised rats, A., III, 188. experimental, A., III, 807.

hyaline material in pancreatic islets in, A., III, 114.

incidence of jaundice in patients with. A., III, 36.

insulin tolerance in, in dogs, A., III, 407 juvenile, insulin sensitivity in. A., III, 729. medico-legal problems of, A., III, 215.

of middle-aged, glucose tolerance return in, A., III, 826.

pancreatic, in relation to endocrines in toads, A., III, 185.

pancreatic and pituitary, intensity of, liver in relation to, A., III, 27.

pathogenesis of, A., III, 588.

phloridzin, urinary excretion of sodium chloride, etc., in, A., III, 476.

prevention of tooth decay in children with, A., III. 266.

renal, in recruits, A., III, 258. severe, treatment of, by insulin mixtures, A., III, 588.

sorbitol metabolism in, A., III, 52.

Diabetes, thyroid and, A., III, 588.

treatment of, A., III, 465.

with insulin, A., 111, 729. in children, A., III, 729.

with testosterone propionate, A., III, 807. without regard to glycosuria and hyper-glycæmia, A., III, 275.

vitamin-A, -B, and -C in, in children, A., III, 751.

weather in relation to, A., III, 130.

Diabetes insipidus, complicating pregnancy, A., III, 809.

diuretic action of thyroid in, A., III, 728. thirst in, effect of pitressin on, A., III, 408. treatment of, A., III, 591.

Diacetic acid, determination of, in blood, C., 76. Diacetone-ethylamine, ethylene ketal of, A., II,

2-Diacetsulphanilylamidothiazole, A., II, 279. Diacetyl, determination of, in animal tissues, C., 29.

in blood, colorimetrically, C., 27, in mixtures with methyl ethyl ketone and methyl vinyl ketone, C., 166.

2:6-Diacetyl-2-devinylphyllochlorin, methyl ester, and its dioxime, A., II, 312.

3:5-Diacetyl-2:4-dimethylpyrrole, 5-monooxime, A., II. 377.

aa'-Diacetyl-aa'-dimethylsuccinic aa'-dibromo-, diethyl ester, A., II, 377.

4:6-Diacetyl-2-ethylresorcinol, A., II, 191. ay-Diacetylglutaric diethyl ester.

y-Diacetylglutaric acid, die di(ethylene ketal) of, A., II, 34. Diacetyl-lycorenine, A., II, 63.

2:4-Diacetylphenol, bis-2:4-dinitrophenylhydrazone, A., II, 296.

1:2-Diacetyl-3-phenyl-5-pyrazolone,

Diacetylphloroglucinol, A., II, 49. Di-1-acetyl-4-piperidyl, A., II, 204.

2:4-Diacetylresorcinol-1-carboxylic acid, ethyl and methyl esters, A., II, 200.

NN'-Di(acetylsulphanilyl)tetramethylenediamine, A., II, 274.

Diacetylsum aresinolic acid, methyl ester, A., II, 109.

NN'-Diacetyltetrahydro-4:4'-dipyridyl, reactions of, A., II, 204.

Diacridines, A., II, 60.

N1: N4-Diacylsulphanilamides, synthesis of, A., II, 365. N^4 : N^4 -Diacylsulphapyridines, A., II, 26.

Dialkoxyphthalides, derivatives of, A., II, 370. Dialkylaminomethylphenyl p-aminobenzoate, hydrochloride, anæsthetic activity of. under Anæsthetics.

Dialkylarsines, complexes of, with rhodous halides, A., I, 46.

9:10-Dialkyl-9:10-dihydrophenanthrenediols, and their derivatives, A., II, 193.

2:2-Dialkylcyclohexanones, derivatives, preparation of, A., II, 78.

9:10-Dialkylphenanthrenes, A., II, 42.

(Dialkylvinyl)alkylcyanoacetic acids, esters. cleavage of, by sodium alkoxides, A., II, 325. $10-\gamma$ -Diallylamino-n-propylphenothiazine, A., II,

Dialyser, rocking, C., 53.

4:4'-Diamidinodimethylstilbene, treatment with, of Trypanosoma congolense infection in cattle, A., III, 552.

See 4:4'-Diamidinodiphenoxypropane. Propamidine.

aromatic, Diamines, reactions with dicarboxylic acids, A., II, 277.

αβ-Diamines, synthesis of, from α-amino-ketones, A., II, 352.

Diamino-oxidase. See under Oxidase. Diamond, A., I, 55.

birefringence of, A., I, 218.

Bolivian Andes, A., I, 257. crystal symmetry and structure of, A., I, 216. luminescence of, A., I, 218.

magnetic susceptibility of, A., I, 217. Panna, crystal forms of, A., I, 216.

photoconductivity of, A., I, 217. X-ray diffusion by, A., I, 269.

X-ray reflexion and structure of, A., I, 215.

218 Diamond, X-ray topographs of, A., I, 215, 269. spectrum of, absorption, ultra-violet, A., I, absorption and fluorescence, A., I, 212. lattice, and specific heat, A., I, 217. Raman, A., I, 213. structure and vibrations of, A., I, 144. synthesis of, A., I, 182. transparency patterns in, ultra-violet, A., I, 211. Ural, constants of, A., I, 70. $\beta\beta$ -Di-n-amylbutyric acid, A., II, 180. and a-cyano-, ethyl ester, A., II, 180. 9-y-Di-n-amylpropylamino-2-methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83. 2:4-Dianilinopyrimidine, hydrochloride, A., II, 349.Dianisidine as oxidation-reduction indicator, C., 111. o-Dianisidinediazidocopper, A., I, 290. Dianisyladipic acids, A., II, 78.

m-Di-p-anisylbenzene. See 4:4"-Dimethoxy-mterphenyl. $a\gamma$ -Di-p-anisyl-n-butane, A., II, 12. β_{γ} -Dianisyl-*n*-butane, A., II, 129. β_{γ} -Di-p-anisyl-n-butane, β_{γ} - d_{1} hydroxy-, A., II, $a\delta$ -Di-p-anisyl- $\beta\gamma$ -dimethylbutane, A., II, 75. 2:4-Di-p-anisyl-3:5-dimethylthiophen, A., II, 306. aβ-Di-p-anisylethylamine, A., II, 293. ac-Di-p-anisylethyl methyl ketone, and its oxime, A., II, 262. αγ-Di-p-anisyl-n-heptane, A., II, 12. αγ-Di-p-anisyl-n-hexane, A., II, 12. 1:3-Di-p-anisylcyclohexane, A., II, 257. γδ-Di-p-anisylhexane-γδ-diol, A., II, 75. γδ-Di-o-anisylhexan-y-ol, A., II, 129. αy -Di-p-anisyl- $\Delta \beta$ -n-hexene, A., II, 13. ay-Di-p-anisyl-o-methyl-n-pentane, A., II, 12. $\alpha \gamma$ -Di-p-anisyl-n-octane, A., II, 12. $\delta\epsilon$ -Dianisyloctanes, A., II, 129. ay-Di-p-anisyl-n-pentane, A., II, 12. aε-Di-p-anisyl-Δo-pentene, anti-a-hydroxyamino-y-oximino-, C., 64. 9:10-Di-p-anisylphenanthrene, A., II, 130. aβ-Di-p-anisylpropane-aγ-dione, A., II, 224. αβ-Dianisylpropan-β-ol, A., II, 128. 2:3-Di-p-anisylquinoxaline, A., II, 76. $2-\beta\beta$ -Di-p-anisylvinyl-1:4-naphthaquinone, A., II, 164. Dianthrano, reaction of, with pyridine, A., II, 264. 5-Dianthranoyldiamines, A., II, 172. Dianthranylbiuret, A., II, 234. Dianthraquinone, preparation of, A., II, 264. 3(α):12(β)-Dianthraquinone-2'-carboxybisnorcholanic acid, methyl ester, A., II, 265.

Dianthrone, reaction of, with pyridine, A., II, 264.

Diaphragm, hernia of. See under Hernia. Diarrheea, after prevertebral ganglia removal in dogs, A., III, 34.

epidemic, in newborn, A., III, 302. transmission of, A., III, 298. with nausea and vomiting, A., III, 701. hyperthyroidism, treatment of, with lipocaic, A., III, 35.

infantile, treatment of, with sulphapyrazine and sulphapyrimidine, A., III, 55.

summer, infantile, causes of, A., III, 300. treatment of, in infants and children, A., III, 346.

s-Di-p-arsinoxidobenzethylenediamide, A., II, 243.

Di-p-arsinoxidobenzoylearbamic acid, ethyl ester, A., II, 242.

s-Di-p-arsinoxidobenzoylhydrazine, A., II, 243. aa'-Diarsonosuccinic acid, and its barium, calcium, and sodium salts, A., II, 175. aa-Diarylaminoethanes, βββ-trichloro-, A., II,

157. 2:4-Diarylpyrroles, A., II, 80, 200.

2:4-Diarylthiophens, synthesis of, A., II, 305. $\beta\beta$ -Diarylvinyl alcohols, A., II, 334.

Diasone, chemical properties and synthesis of, A., III, 427.

chemotherapeutic action of, A., III, 831.

Diaspore, identity of, with tanatarite, A., I, 48. Diastase, animal, C., 175.

bile-, effect on, of division of sphincter of Oddi in dogs, A., III, 36.

in blood and urine in alcoholism, A., III, 59. Diathermy, short-wave, effect of heat produced by, on muscle activity, A., III, 724.

Diatoms, fat content of, A., III, 706. marine. See Navicula torquatum.

7:16-Diazanaphthacene, derivatives of, A., II,

Diazoacetic acid, ethyl ester, reaction of, with stannic chloride and with ferric chloride, A.,

 γ -Diazo- α -4-acetoxy-3-methoxyphenylpropan- β one, a-hydroxy-, a-acetyl derivative, A., II,

21-Diazo-3(a)-acetoxyallopregnan-20-one, II, 106.

Diazobenzene, reaction of, with ethyl cyclohexan-2-onecarboxylate, A., II, 247.

Diazo-compounds, aromatic, reaction of, with alkylacctoacetic esters, A., II, 247. with β -ketonic esters, A., II, 331.

coupling of, mechanism of, A., II, 75. Diazocyanides, cis-trans-transformation of, A., I, 131.

syn- and anti-Diazocyanides, aromatic, structure of, A., II, 332.

Diazoethane, βββ-trifluoro-, A., II, 4. 25-Diazo-24-keto-3(a):7(a):12(β)-irihydroxy-25-homocholane, and its 3(a):7(a):12(β) homocholane, its $3(a):7(a):12(\beta)$ triformate, A., II, 140.

Diazomethane, preparation of, A., II, 6. reaction of, with acyclic sugar derivatives,

A., II, 6, 214. with ammonium salts of organic acids, A., II, 299.

with α-cyanocrotonic acid, A., II, 290. with 1-keto-1:2:3:4-tetrahydronaphthalene, A., II, 164.

syntheses with, A., II, 92. Diazonaphthols, decomposition of, A., II, 97.

See also Diazo-oxides. 2-Diazo-1-naphthol, 6-bromo-, A., II, 97.

1-Diazo-2-naphthol, 4-5-dinitro-, A., II, 97. Diazonium borofluorides, A., II, 27.

compounds, catalytic decomposition of, A., II, 96.

groups, replacement of, by nitro-groups, A., II, 96.

Diazo-oxides, internal, constitution of, A., II, 45. resonance structure of, A., II, 12. Diazo-phenols. See Diazo-oxides.

21-Diazoallopregnan-20-one, A., II, 106. Diazo-reaction, mechanism of, A., II, 216. Diazotates. and properties.

iazotates, preparation, structure of, A., II, 331. Dibenzanthracene, toxicity of, effect of vitamin-

 $m{A}$ on, in tissues, A., III, 542.

1:2:5:6-Dibenzanthracene, effect of, on lymph nodes of rats, A., III, 792.

elimination of, from rabbits, A., III, 661. from rats, A., III, 661. fluorescence of, A., I, 3.

3:5-Dibenzeneazophenylarsonic acid, 2:4-dihydroxy-, A., II, 243.

Dibenzenesulphonamide, 4:4'-diodo-, potassium salt, A., II, 11.

2-Dibenzenesulphonamidodibenzfuran, 3-nitro-, A., II, 173.

NN'-Dibenzenesulphonyltetramethylenediamine, NN'-di-p-nitro-, A., II, 274.

Dibenziuran, A., II, 303, 333.

Dibenziurans, 2- and 2:8-substituted derivatives of, A., II, 55.

1:2-4:5-Di-1':2'-benziminazolopiperazine, A., II,

Dibenzindolizine, derivatives of, synthesis of, A., II. 203.

Dibenzeyclooctanone, and its 2:4-dinitrophenyl-hydrazone, A., II, 254.

Dibenzo-p-dioxin, metallation of, A., II, 55. Dibenzo-p-dioxin-1-carboxylic acid, and its methyl ester, A., II, 55.

Dibenzo-p-dioxindicarboxylic acids, A., II, 55. lin.-Dibenzothionaphthen, from coal tar, A., II, 110.

5:4:5':4'-Dibenzoylenedinaphthylene dioxide, A., II. 304.

NN-Dibenzoyl-N'-o-ethylphenyl-N'-ethylearbamide, A., II, 255.

Dibenzoylmethane, m-nitro-, properties of, A., II, 17. Dibenzoylnaphthalene oxide, di-o-bromo-, A., II,

304.

5:5'-Dibenzoylnaphthylene dioxide, tetrabromo-, A., II, 304.

9:10-Dibenzoylphenanthrene, anil, and its derivatives, A., II, 56.

1:4-Dibenzoylpiperazine, 1:4-di-p-nitro-, A., II, 100.

4:4"-Dibenzoyl-p-quaterphenyl, A., II, 189. $N^1:N^4$ -Dibenzoylsulphanilamide, and $N^1:N^4$ -di-

p-nitro-, A., II, 100, 365. $N^1:N^4$ -Dibenzoylsulphapyridine, nitro-, A., II, 365.

1:2:3:4-Dibenzphenanthrene, A., II, 10. and its derivatives, A., II, 215.

1:4-Di-1'-benztriazolyl-2:3-benzanthraquinone, A., II, 60.

Dibenzyl triiodide sulphide, A., I, 192. diiodosulphide, dipole moment of, A., I, 192.

p-Dibenzylacetamidoacetophenone, A., 11, 306. p-Dibenzylaeetamidobenzophenone, A., II, 306.

Dibenzylacetic acid, diazo-ketone from, A., II, 299.

Dibenzylacetic acid, a-cyano-, ethyl ester, hydrazide, A., II, 91.

δ-Dibenzylamino-α-phenylvaleric acid, α-cyano-, ethyl ester, A., II, 273.

 $\alpha \gamma$ -Dibenzylaminopropan- β -ol, A., II, 366. 1:3-Dibenzylbenztriazolium chloride, A., II, 112. Dibenzyldimethylsulphonium chloride bismuth ·

chloride, A., II, 2. 4:4'-Dibenzyl-1:1'-dipiperazinylcarbimide, hydrobromide, A., II, 236.

Dibenzyl-n-dodecylamine, A., II, 35.

NN'-di-p-NN'-Dibenzylethylenediamine, chloro, and -di-p-nitro-, dihydrochloride, A., II, 366.

γδ-Dibenzyl-n-hexane, γδ-di-p-hydroxy-, A., II, 13.

2:6-Dibenzylcyclohexanone, oxime, and semicarbazone, A., II, 372.

o-Dibenzylcyclohexanones, A., II, 372.

3:3'-Dibenzylideneamino-2:2':4:4'-tetraphenylmesophenyldipyrromethine, A., II, 81.

αβγδ-Dibenzylidene-εζ-deoxy-D-sorbitol, A., II, 179. ay:βδ-Dibenzylidene-D-sorbitol, A., II, 286.

αβγδ-Dibenzylidene-D-sorbitolein, A., II, 179. Dibenzylmethylamine, 4-amino-, dihydrochloride of, A., II, 46.

2:4-Dibenzyloxybenzoic acid, A., II, 101.

2:4-Di-p-benzyloxybenzoyloxybenzoic acid. benzyl oster, A., II, 101.

3:4-Dibenzyloxybutyrophenone, a-bromo-, A., II, 295.

aβ-Dibenzylstilbene, 4:4'-dihydroxy-, A., II, 129.

Diborane, structure of, A., I, 267.

Dibutenyl ketone, a-methylbenzylamine salt, A.,

Dibutyl sulphide, thallium salt, A., II, 66.

ω-Dibutylaminoacetanilide, and o-, m-, and p-amino-, and o-, m-, and p-nitro-, and their hydrochlorides, A., II, 127.

4-β-Dissobutylaminoethylamino-6-hydroxyquinoline, dihydrochloride, A., II, 379. 4-β-Di:sobutylaminoethylamino-6-methoxy-

quinoline, dihydrochloride, A., II, 379. 4-δ-Diisobutylamino-a-methyl-n-butylamino-8methoxyquinoline, dihydrochloride, A., II,

 $\gamma\gamma'$ -Di-tert.-butylamino-n-propyl ether, $\gamma\gamma$ -di- $\beta\beta'\beta''$ -tr-thydroxy-, di-hydrochloride, A., II, 323

Dibutylaminopropylene chloride, aurichloride of, A., II, 47.

N'-γ-Di-n-butylamino-n-propylsulphanilamide, hydrochloride, A., II, 292.

p-Dibntylbenzenes, isomeric, A., II, 10.

NN'-Di-tert.-butylcarbamide, A., II, 92. 9:9-Di-n-butyl-9:10-dihydrophenanthrene,

- 5:5-Di-n-butyl-2:4-dithiobarbituric acid, A., II,
- NN'-Di-tert.-butylethylenediamine, $\beta\beta'\beta''-tri$ hydroxy-, dihydrobromide, A., II, 323.
- 10:10-Di-n-butyl-9-phenanthrone, A., II, 193. Di-m-tert.-butylphenyl-p-cyclohexylphenylmethyl chloride, A., II, 329.
- β-Di-n- and -iso-butylpropionitriles, A., II, 82. γ-Di-n- and -iso-butyl-n-propylamines, dipicrates, A., II, 82.
- 9-Di-n- and -180-butylpropylamino-2-methoxyacridines, 6-chloro-, dihydrochlorides, A., II,
- NN'-Di-tert.-butylpropylene-ay-diamine, NN'-di-ββ'β"-trihydroxy and its derivatives, A., II, 323.
- 5:5-Di-n-butyl-2:4:6-trithiobarbituric acid, A., II, 203.
- N1:N4-Di-n-butyrylsulphanilamide, A., II, 365.
- Di-1-camphyl, A., II, 165. Dicarbazyl di- and trr-sulphides, and their dibenzoyl derivatives, A., II, 235.
- ϵ -3:4-Di(carbethoxyamino)tetrahydro-2-furyl-namyl alcohols, A., II, 165.
- ϵ -3:4-Di(carbethoxyamıno)tetrahydro-2-furyl-nvaleric acids, A., II, 165.
- 2:5-Di(carbethoxyamino)tetrahydrothiophen, A., II. 55.
- 4-aδ-Dicarbethoxy-n-butylthiazole, 2-amino-, A., II, 313.
- 4-aβ-Dicarbethoxyethylthiazole, 2-amino-, A., II, 313.
- β -2:4-Dicarbethoxyindole-3-propionic acid. ethyl ester, A., II, 23.
- β -2:6-Dicarbethoxyindole-3-propionic acid, ethyl ester, A., II, 23.
- a-Di-a8-4-carbethoxy-1-phenyl-5-methyl-3pyrazolylethane, A., II, 212.
- 4-ay-Dicarbethoxy-n-propylthiazole, 2-amino-. A., II, 313.
- δ -3:4-Dicarbethoxytetrahydro-2-furyl-n-amyl alcohol, dihydrazides, A., II, 165. 5:5'-Dicarbethoxy-3:4:3':4'-tetramethyl-
- dipyrrylcarbinol, and its methyl ether, A., II,
- 4-αλ-Dicarbethoxy-n-undecylthiazole, 2-amino-, A., II, 313.
- $\delta \epsilon$ -Dicarbomethoxy-n-octane- $\gamma \zeta$ -dione, A., II,
- 5:5'-Di-o-carboxybenzoyldinaphthylene dioxide, and its anhydride, and dinitro-derivative, A., II, 304.
- Di-o-carboxybenzoylperylene-A1 and A., II,
- 8-3:4-Dicarboxy-2-furyl-n-valeric acid, and its derivatives, A., II, 165.
- δ-3:4-Dicarboxy-2-furyl-n-valeropiperidide, A., II, 165.
- y-2:2-Dicarboxy-7-methoxy-1:2:3:4tetrahydro-1-phenanthryl-n-butyric acid, A., II. 137.
- y-2:2-Dicarboxy-7-methoxy-1:2:3:4tetrahydro-1-phenanthrylidene-n-butyric acid, and its trimethyl ester, A., II, 137.
- β-2:2-Dicarboxy-7-methoxy-1:2:3:4-tetrahydro-1-phenanthrylidenepropionic acid, trimethyl
- ester, A., II, 137. β -2:2-Dicarboxy-7-methoxy-1:2:3:4-
- tetrahydro-1-phenanthrylpropionic acid. dimethyl ester, A., II, 137.
- NN-Di-o-2-carboxyphenylbenzoylhydrazine, and its derivatives, A., II, 135.
- Dicarboxyphenylglyoxylic acid, trimethyl ester, A., II, 206.
- 8-Dicetylthiocarbamide, A., II, 183.
- Dichelidamatoferric acid, and its salts, A., II,
- Dichelidamato-oxoferric acid, salts, A., II, 111.
- Di-7(a)-cholestanyl sulphite, di-3(θ)-hydroxy-, diacetyl derivative, A., II, 20.
- Dicholine phosphate reineckate, A., II, 248. Dichroism, electric, in disperse systems, A., I, 166.
- Dichromates. See under Chromium. Dichromic acid. See under Chromium. $N^1:N^4$ -Dicinnamoylsulphanilamide, A., II, 365.

- Dicoumarin. See 3:3'-Methylenebis-(4-hydroxycoumarin).
- 3:2:5:6-Di-(3':4'-coumarino)-4-n-amylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-p-anisylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-benzylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-n-butylpyran,A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-isobutylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-ethylpyran, A., II. 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-(3''-methoxy-4"-acetoxy-1"-phenyl)pyran, A., II, 167.
- 3:2:5:6-Di-(3':4'-coumarino)-4-(3'':4''-methyleneoxy-1''-phenyl)pyran, A., II, 167. 3:2:5:6-Di-(3':4'-coumarino)-4-methylpyran, A., II, 166.
- $3:2:5:6-Di-(3':4'-coumarino)-4-(\omega-phenyl-n$ propyl)pyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-phenylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-n-propylpyran, A., II, 166.
- 3:2:5:6-Di-(3':4'-coumarino)-4-isopropylpyran, A., II, 166.
- 3:2:5:8-Di-(3':4'-coumarino)-4-pyran, A., II, 166.
- Dicumarol. See 3:3'-Mcthylenebis-(4-hydroxycoumarin).
- Dicyanodiamide, diamagnetic susceptibility of, A., I, 121.
- Didelphys virginiana, Cowper's and Bartholin's glands in, development of, A., III, 571.
- Di-8-diethylaminobutylamine, and its tripicrate, A., II, 349.
- Di- $(\gamma-\beta'$ -diethylaminoethoxy-n-propyl)amine, A., II, 291.
- $Di-(\gamma-\delta'-diethylamino-\alpha-methyl-n-butoxy-n-$
- propyl)amine, A., II, 291. $Di-(\gamma-\gamma'-diethylamino-n-propoxy-n-propyl)-$
- amine, A., II, 291. Di-(y-diethylamino-n-propyl)amine, and picrate, A., II, 291.
- β -Di-(γ -diethylamino-n-propyl)aminopropionitrile, and its picrate, A., II, 291.
- $Di-(\gamma\gamma'-diethylamino-n-propylamino-n-propyl)$ amine, and its picrate, A., II, 291.
- γ -Di-(γ' -diethylamino-n-propyl)amino-npropylamine, and its picrate, A., II, 291. N'N'-Di- $(\gamma$ -diethylamino-n-propyl)sulphanil-
- amide, acetyl derivative and hydrochloride, A., II, 292.
- Di-2:3-dihydro-2-indenyl sulphide, di-3-hydroxy-, A., II, 154.
- Di-(4:5-dimethoxy-3-carboxy-2-hydroxymethylbenzyl) ether, dilactone, A., II, 370.
- γδ-Di-3:4-dimethoxyphenyl-n-hexane, A., II, . 13.
- a- and β-Di-1:6-dimethylaminocyclodecane dimethiodides, A., II, 159.
- $s ext{-}\mathrm{Di-}p ext{-}\mathrm{dimethylaminophenylselenocarbamide},$ and its methiodide and methosulphate, A., II, 216.
- $2-\beta\beta$ -Di-p-dimethylaminophenylvinyl-1:4naphthaquinol diacetate, A., II, 164.
- 2-ββ-Di-p-dimethylaminophenylvinyl-1:4naphthaquinone, A., II, 164.
- $2-\beta\beta$ -Di-p-dimethylaminophenylvinyl-1:4naphthaquinone, 5:8-dihydroxy-, and its 5:8-diacetate, A., II, 164.
- $4-\beta\beta$ -Di-p-dimethylaminophenylvinyl-1:2naphthaquinone, and its derivatives, A., II,
- 164. 2:6-Di- $\alpha\epsilon$ -dimethyl- Δ^{δ} -(or $-\Delta^{\epsilon}$ -)n-hexenyl-3:4benz-43-dihydro-1:2-pyran, A., II, 218.
- Di-(1:1-diphenyl-3-indanyl) ether, A., II, 193. mm'- and pp'-Di(diphenylmethyl)azobenzenes mm'- and pp'-dichloro-, and mm'- and pp'-dihydroxy-, A., II, 253.
- pp'-Di(diphenylmethyl)azoxybenzene, pp'-dihydroxy-, A., II, 253.
- 1:3-Di-n-dodecylbenztriazolium bromide, A., II,
- 1:4-Di-n-dodecylpiperazine dihydrochloride, A., II, 236.

- Diduroquinone, structure of, A., II, 376.
- ββ-Diisodurylvinyl alcohol, and its benzoate, A., II, 334.
- Dielectrics, breakdown and time-lag of, A., I, 166.
 - Stark effect in, A., I, 261.
- Dielectric constants, ionic equilibrium, ionic force and, in solutions, A., I, 126. measurement of, C., 102.

 - apparatus for, C., 151.
 - of acetylenic ethers, A., I, 193. of dipolar solids, A., I, 237.
 - of mixed systems, A., I, 57.
- of organic liquids, viscosity dispersion of, A., I, 192.
- of organic molecular compounds, A., I, 267. polymorphism and, A., I, 79.
- Dielectrograph, direct current, for recording heart movements, A., III, 326.
- Dienes, addition of, to toluene, A., II, 328.
- oxidation of, by hydrogen peroxide, presence of selenious anhydride, A., II, 317. Diene reaction, A., II, 260.
- Dienæstrol, and its derivatives, A., II, 75.
- treatment with, of menopause, A., III, 254. isoDienœstrol, A., II, 76.
- Dientamæba fragilis, nuclear division and structure in, A., III, 572.
- 7:12:5:14-Diepoxy-5:7:12:14-tetraphenyl-
- 5:5a:6a:7:12:12a:13a:14-octahydropentacene-6:13-quinone, A., II, 19.
- 7:12:5:14-Diepoxy-5:7:12:14-tetraphenyl-2:3:9:10-tetramethyl-5:5a:6a:7:12:12a:13a:14octahydropentacene-6:13-quinone, A., II, 19.
- Diet, American, adequacy of, A., III, 264. average, A., III, 125.
 - and nutritional status of women in low-income population group, A., III, 197.
 - animal, fat oxidation in, A., III, 130. Bengali, vitamin-C requirement for persons
 - on, A., III, 201. British, eggs, meat, and milk in, A., III, 483.
 - fish in, A., III, 483.
 - calcium content of, effect of increase of, on growth and life of unmated female rats, Ä., III, 42.
 - carbohydrate-free, effect of, on rats, A., III, 265.
 - cattle, limited and full, A., III, 418.
 - composition of, effect of, on vitamin content of rat tissues, A., III, 268.
 - conditions of, in industry, A., III, 41.
- containing glucose, compared with containing triacetin, A., III, 750.
- containing hydrogenated or unhydrogenated fats, nutritional value of, for rats, A., III, 42.
- containing triacetin, compared with one containing glucose, A., III, 750.
- corn, effect of, on appetite and activity of rats, A., III, 601.
- cow's milk and honey, biochemical and clinical study of, for man, A., III, 545.
- digestion of, by cows, effect of fat on, A., III, 484.
- effect of, on cholesterol concentration in blood and bile, A., III, 41.
- factor in, essential for guinea-pigs, A., III, fat, with reference to leukæmia appearance
- and induction in mice, A., III, 820. fish, raw, thiamin deficiency development in
- cats on, A., III, 824. for energy requirements of animals, A., III,
- 197. fumigated with methyl bromide, response of
- rats on, A., III, 546. goitrogenic, basal metabolism of rats fed, A., III, 185.
- guinea-pig's, essentials for, A., III, 201. simplified, A., III, 670.
- high-carbohydrate-low-calcium, utilisation of calcium by rats on, A., III, 124.
- high-protein-low-calcium, utilisation calcium by rats on, A., III, 124. high-tyrosine, alkaptonuria due to, in rats, A.,
- III, 129. in Central Provinces and Berar, A., III, 544.

Diet, in old age, A., III, 41.

in relation to prevention of liver damage, A., III. 35.

in treatment of disease, A., III, 264.

industrial, lunch, adequacy of, and use of yeast as supplement, A., III, 125.

insects, basic, A., III, 264.

isocaloric, metabolic effect of, with reference to prevention of postprandial hypoglycamic symptoms, A., III, 52.

lamb's, feeds for fattening in, A., III, 418. low-fat, treatment with, and thyroxine, of acne conglobata and perianal pyoderma, A., III, 184.

low-lysine, effect of, on nitrogen balance in man, and tumour growth in mice, A., III,

low-protein, effect of vitamin-E in, on life of rats, A., III, 488.

low-riboflavin and -thiamin, for man, feeding of rats on, A., III, 125.

low-vitamin-B, maintenance of adult rats on, A., III, 602.

mealic meal porridge and sour milk, effect of, on growth of rats, A., III, 823.

meatless, growth of trout on, effect of gelatin on, A., III, 600. natural, low-manganese, effect of, on swine,

A., III, 601. New York City school children, in 1917 and

1942, A., III, 749.

nutritive value of, calculation of, A., III, 482.

of Calcutta families and institutions, A., III, 266.

pig's, distillers' by-products in, A., III, 483. low in manganese, A., III, 352.

previous, influence of, on preferential utilisation of foodstuffs, A., III, 197. protective, A., III, 266.

protein consumption in, in relation to calorie value, A., III, 484.

protein content of, during pregnancy, A., III,

effect of, on fat digestibility, A., III, 419. protein value of, measurement of, A., III, 419.

purified, growth, lactation, and reproduction in rats on, A., III, 545.

rachitogenic, maternal, effect of, on skeletal development of young rat, A., III, 272.

riboflavin-restricted, biochemical and physiological functions in young men on, A., III,

salt-poor, effect of, on labour, A., III, 410. scientific basis for, by U.S. National Research Council, A., III, 600.

"self-selected," and appetite of adrenal-ectomised rats, A., III, 251.

South African, poor, nutritional value of, and of dietary supplements, A., III, 823.

staple, African, effect of prolonged feeding with, on rats, A., III, 264.

starvation, hunger ketosis and, A., III, 275. synthetic, containing thiamin, growth of rats on, A., III, 422.

manganesc-deficient, perosis due to, A., III, 421.

protein level in, A., III, 546.

use of, for food allergy and typhoid, A., III,

vitamin-.1-rich, effect of, on colostrum-vitamin-.4 of dairy cows, A., III, 486.

vitamin-B-free, hepatic injury in dogs due to, A., III, 36.

vitamin- B_1 content of, in relation to electrocardiographic findings in pregnant women, A., III, 486.

vitamin-D deficient, relation between growth rate and rickets in sheep on. A., III,

vitamin-E-free, effect of, on adrenal cortex, A., III, 185.

women's, in moderate-income group, A., III,

See also Catering, Nutrition, etc ac-Diethoxyacetylacetone, A., II, 238. 6:6'-Diethoxy-2-azobenzthiazole, A., II, 146.

6:6'-Diethoxy-2-azoxybenztriazole, A., II, 146. 3:4-Diethoxybenzylidenecamphorylsemi-

carbazone, A., II, 232. aβ-Diethoxy-n-hexane, γ-amino-, A., II, 4. aβ-Diethoxy-n-hexan-y-one, A., II, 4.

au-Di-(p-ethoxyphenyl)- β -phenylbromoethylene. See D.B.E.

 $\alpha\beta$ -Diethoxypropionitrile, A., II, 4. Diethyl ether. See Ethyl ether.

formal, β -chloro-, A., II, 272. sulphide, sulphur dioxide compound of, A., I, 16.

thallium salt, A., II, 66. sulphide, tetrachloro-, A., II, 364.

sulphite, di-β-chloro-β-nitro-, A., II, 358. ω-Diethylaminoacetanilide, m- and p-amino-, and m- and p-nitro-, and their hydrochlorides, A., II. 127.

4-(ϵ -Diethylamino- β -amyl)aminoanisole, 3-amino-, and 3-nitro-, A., II, 276.

11-(ε-Diethylamino-β-amyl)aminolupinane, and its tripicrolonate, A., II, 277. 1- $(\epsilon$ -Diethylamino- β -amyl)- θ -methoxybenz-

iminazole, and its dipicrolonate, A., II, 277.

1-(ϵ -Diethylamino- β -amyl)-6-methoxy-2methylbenziminazole, and its dipicrolonate, A., II, 277.

 $9\hbox{-} p\hbox{-} {\bf Diethylaminoanilino-2-methoxyacridine,}$ 6-chloro-, A., II, 83.

9-y-p-Diethylaminoanilinopropylamino-2methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83.

N-y-p-Diethylaminoanilino-n-propylphthalimide, A., II, 82.

 $\beta\beta'$ -Diethylaminoethoxypropionitrile, its and picrate, A., II, 291.

 $9-\gamma-\beta'$ -Diethylaminoethoxypropylamino-2methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83.

10-β-Diethylaminoethylacridone, A., II, 202. $6'-\beta$ -Diethylaminoethylaminoa pocupreine, its hydrogen camphorate and hydrogen d-tartrate, A., II, 174.

4-β-Diethylaminoethylamino-6-hydroxyquinoline, A., II, 379.

 $4-\beta$ -Diethylaminoethylamino-6-methoxy-2methylquinoline, A., II, 379.

4-β-Diethylaminoethylamino-6-methoxyquinoline, A., II, 379.

8-β-Diethylaminoethylamino-6-methoxyquinoline, 5-chloro-, A., II, 56.

N-Diethylaminoethyl-N-ethylaniline. F1571.

9-β-Diethylaminoethylcarbazole, A., II, 202. 9-β-Diethylaminoethylfluorene, A., II, 202. 3-\(\beta\)-Diethylaminoethylindene, A., II, 202.

 β -Diethylaminoethyl methyl ketone, $a\gamma$ -butylene, ethylene and γ (or β)-hydroxy- $\alpha\beta$ (or $\alpha\gamma$)-propylene ketals, A., II, 34.

10- β -Diethylaminoethylphenothiazine, A., II,

1-β-Diethylaminoethylpyrrole, A., II, 202. β - γ' -Diethylamıno- α' -methyl-n-butoxypropionitrile, A., II, 291.

 γ - δ' -Diethylamino-a-methyl-n-butoxy-npropylamine, and its picrate, A., II, 291.

4-δ-Diethylamino-a-methyl-n-butylammo-2-oanisylquinoline, A., II, 309.

δ-Diethylamino-a-methyl-n-butylaminobenzfurano-2':1'-5:6-quinoline, A., II, 173.

4- δ -Diethylamino- α -methyl-n-butylamino- θ hydroxyquinoline, dihydrochloride, A., II,

4-δ-Diethylamino-a-methyl-n-butylamino-6methoxy-2-m- and -p-chlorophenylquinolines, A., II. 308.

 $4-\delta$ -Diethylamino- α -methyl-n-butylamino- δ methoxy-2-phenylquinoline, A., II, 309.

 $a\beta$ -Di-(x-ethylaminomethylphenyl)ethane, aß-di-x-B-amino-, A., II, 366.

 ${\bf Di-} (x\hbox{-}{\bf ethylaminomethylphenyl}) \hbox{methane},$ di-x-β-amino-, A., II, 366. 2:5-Di(ethylaminomethyl)-p-xylene,

2:5-di-β-amino-, A., II, 366. 4:6-Di(ethylaminomethyl)-m-xylene,

4:6-di-β-amino-, A., II, 366. ε-Diethylaminopentane, α-amino-, determination of, and its purification, C., 167.

 γ -Diethylamino-a-phenyl-n-butyric acid. diethylaminoethyl ester, A., II, 306.

y-Diethylamino-a-phenyl-n-butyronitrile, A., II,

y-Diethylamino-a-phenyl-n-butyrophenone, A., II, 202.

acid. p-Diethylaminophenyldithiocarbamic p-diethylaminophenylammonium salt, A., II,

γ-Diethylammo-a-phenyl-a-ethylbutyronitrile, A., II, 272.

p-Diethylaminophenyl-p-tolylazoxysulphone, A., II. 331.

y-Diethylaminopropanesulphondiethylamide, A., II, 202.

y-Diethylaminopropionitrile, picrate, A., II, 291. β-γ'-Diethylamino-n-propoxypropionitrile, II, 291.

γ-γ'-Diethylamino-n-propoxy-n-propylamine, A., II, 291.

 γ -Diethylamino-n-propylamine, γ -di- β' -hydroxy-, and its picrate, A., II, 291.

10-3'-y-Diethylamino-n-propylamino-panisylphenothiazine, A., II, 353.

y-Diethylamino-n-propylaminobenzfurano-2':1'-6:7-quinoline, A., II, 173.

4-y-Diethylamino-n-propylamino-6-methoxyquinoline, A., II, 379.

8-y-Diethylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

1, $-p-\gamma$ -Diethylaminopropylaminophenyl-3:4dihydroisoquinoline, A., II, 309.

3-y-Diethylaminopropylamino-1-phenyl-3:4dihydroisoquinoline, and its hydrochloride, A., II, 309.

10-o-y-Diethylamino-n-propylaminophenylphenothiazine, A., II, 353.

10-2'-y-Diethylamino-n-propylaminophenylphenothiazine, 10-4'-chloro-, A., II, 353.

 β - γ' -Diethylamino-n-propylamino-npropionitrile, A., II, 291.

γγ'-Diethylamino-n-propylamino-n-propylamine, A., II, 291.

10-3'- γ -Diethylamino-n-propylamino-ptolylphenothiazine, A., II, 353.

y-Diethylamino n-propyl methyl ketone, ethylene and γ (or β)-hydroxy- $\alpha\beta$ (or $\alpha\gamma$)-propylene ketals, A., II, 34.

10-γ-Diethylamino-n-propylphenothiazine, its dipicrate, A., II, 353. N'-γ-Diethylamino-n-propylsulphanilamide, A.,

IÍ, 291. 8-ω-Diethylaminoundecylamino-6-methoxyquinoline, 5-chloro-, hydrochloride, A., II,

57. Diethylaniline, determination of, in ethylaniline, C., 22.

2:5-Diethylbenzophenone, 2:4-dinitrophenylhydrazone, A., II, 223.

3:4-Diethylbenzophenone, semicarbazone, A., II, 2:4-dinitrophenyl-

3:5-Diethylbenzophenone,

hydrazone and semicarbazone, A., II, 223. Diethylcarbinyl p-toluene sulphonate, A., II,

NN-Diethyl-N'-n-cetylhydrazine, A., II, 184. 2:6-Diethyl-p-cresol, A., II, 294.

1:1'-Diethyl-2:2'-cyanine chloride, spectrum of, A., I, 236.

NN'-Diethyl-ψ-isocyanine chloride, adsorption of, on mica, A., I, 124. fluorescence of, A., I, 3.

10:10'-Diethyldiacridine, and its diacridylium hydrogen nitrate, A., II, 60.

 $\alpha\beta$ -Diethyldibenzyl, p-amino- β -hydroxy-, A., II,

a-hydroxy-. aβ-Diphenyl-a-ethyl-n-Sec

butyl alcohol. p-hydroxy-, and its benzoate, A., II, 44. NN-Diethyl-N'N'-di- β -cyanoethylpropylene- $a\gamma$ -

diamine, and its picrate, A., II, 291. 2:4-Diethyl-1:3-dioxan, 6-hydroxy-, 6-acetate,

A., II, 233. dl- $a\beta$ -Diethyldiphenylethane, 4:4'-dihvdroxy-, dimethyl ether, A., II, 129.

5:5-Diethyl-2:4-dithiobarbituric acid, A., II, 203. 5:5-Diethyl-2:4-dithiobarbituric acid, 6-imino-, A., II, 203.

Diethyl-n-dodecylamine, and its hydrochloride, A., II. 35. NN-Diethyl-N'-n-dodecylhydrazine, A., II, 184. Diethylethylamine, di-β-cyano-, and its picrate, A., II, 291. Diethyldifluorosilane, A., II, 383. 2:5-Diethylfuran-3:4-dicarboxylic acid, A., II, 305. aa-Diethylglutaric acid, A., II, 185. γδ-Diethylhexane, preparation and properties of, A., II, 69. cis-1:2-Diethylcyclohexane, A., II, 281. cis-3:4-Diethylcyclohexane, I-bromo-, A., II, 281. cis-3:4-Diethylcyclohexanecarboxylic acid, A., II, (-)-cis-3:4-Diethylcyclohexane-1:1-dicarboxylic acid, and its diethyl ester, A., II, 281. yo-Diethyl-Ay-hexene, preparation properties of, A., II, 69. β -Di- β' -ethyl-n-hexylpropionitrile, A., II, 82. NN'-Diethyl-N'- $\beta\beta'\beta''$ - tr_i hydroxy-tert.butylpropylene-ay-diamine, β-hydroxy-NN'di-β-hydroxy-, dihydrochloride, A., II, 323. Diethyl ketoxime, dissociation constant of, A., I,

1:4-Diethylnaphthalene, A., II, 330. Diethyl-n-octylamine, A., II, 35.

(+)- $\beta\gamma$ -Diethylpentane, $a\epsilon$ -dibromo-, A., II, 281. aβ-Di-2-ethylphenylethane, aβ-d1-4-hydroxy-, A., II, 13. benzoyl

1:4-Diethylpiperazine, l- β -hydroxy-, be derivative, dihydrochloride, A., II, 236. cis(+)-3:4-Diethylpiperidine, and its N-benzyI derivative and picrate, A., II, 281.

3:3'-Diethylquatercyclopentyl, A., II, 187. aβ-Diethylstilhene, p-amino-, and its hydro-chloride, A., II, 44.

2:2'-dihydroxy., A., II, 129. Diethylstilbæstrol, and its dipropionate, treatment with, of vaginitis, A., III, 735. clinical experiments with, A., III, 31, 810.

diabetogenic effect of, in adrenalectomised, hypophysectomised, partiallyand depancreatised rats, A., III, 808. in partially departreatised rats, A., III, 31.

in relation to adrenal cortex in rats, A., III, 251.

effect of, on anterior pituitary of immature rats, A., III, 593.

on blood pressure of normal and hypophysectomised rats, A., III, 172.

on blood pressure, heart rate, and respiration of albino rats, A., III, 31. on mammary tumour formation in mice fed

low-cystine diet, A., III, 599. esters of, lactation induction by, in heifers, A.,

III, 740. excretion of, in tumour-bearing rabbits, A., III, 263.

inactivation of, by micro-organisms, A., III, 296

toxicity of, effect of liver extracts on, A., III,

treatment with, of prostatism, A., III, 655. use of, in lactation inhibition and suppression, A., III, 740.

3:3-Diethyltetrahydropyridine, 2:4-dihydroxy-, treatment with, of insomnia, A., III, 59.

3:6-Diethylthiolethyl-2:5-diketopiperazine, 3- β -chloro-6- β - β' -hydroxy-, and 3:6-di- β - β' hydroxy-, A., II, 122.

Diethyltridecylamine hydrochloride, A., II, 184. 5:5-Diethyl-2:4:6-trithiobarbituric acid, A., II, 203.

Dietician, role of, A., III, 483. Diffraction gratings, C., 150. ultrasonic, A., I, 146.

Diffusion, equations for, A., I, 220. in turbulent media, A., 1, 101. equations and models for, A., I, 197. in liquids, interferometry of, C., 201. membrane, A., I, 153. of binary mixtures, A., I. 197.

of gaseous hydrocarbons, apparatus for, C., 203.

of salt solutions, A., I, 197. of ternary solutions, A., I, 275. Diffusion, plane problems of, A., I, 140. probable concentration theory in, A., I, 169. surface A., I, 12.

theory of, with reference to characteristic diffusion, A., I, 275.

thermal, in gases, A., I, 274. in liquids, A., I, 149, 275. in mixed gases, A., I, 81. kinetics of, A., I, 149. thermodynamics of, A., I, 149.

thermo-effect in, A., I, 102. zone theory of, A., I, 20.

Diffusion potential. See under Potential.

Di-9-fluorenylmethyleneamine, di-2:7-dibromo-, A., 11, 261.

 $N^1: N^4$ -Difuroylsulphanilamide, A., II, 365. Digermane, pyrolysis of, A., I, 130.

Digestion, in ruminants, A., III, 539. See also Gastric juice, Intestines, Stomach, etc.

Digestive tract. See Alimentary tract. Diginane, A., II, 231.

Diginane, dihydroxy-, and its diacetate, A., II,

Diginigenin, A., II, 231.

degradation of, to diginane, A., II, 230. Diginin, A., II, 230, 231.

Digitalis, and its derivatives, A., III, 210.

toxicity of, effect of sympathicolytic and other agents on, in cats, A., III, 57.

treatment with, of heart failure, A., III, 57, 210.

Digitaloids, toxicity of, effect of heparin on, A., III, 164.

Digitalose, constitution and configuration of, A., II, 152.

phenylosazone, A., II, 152.

Digitoxin, action of, on frog muscle, A., III, 554. binding of, by serum- and tissue-proteins in rabbits, A., III, 554.

d-Digitoxobenziminazole, and its picrate, A., II,

d-Digitoxose, identification of, A., II, 37. Diglucosylethylenediamine, A., II, 38.

Diglycerides, unsaturated, symmetrical mixed, A., II, 180.

Diguanide, complexes of, with bivalent metals, A., I, 89.

with bi- and tervalent metals, A., II, 95. with tervalent metals, A., I, 230. Di- $\Delta\beta$ -n-heptinenyl ether, A., II, 30.

 $N^1:N^4$ -Di-n-heptoylsulphanilamide, A., II, 365. Dicycloheptyl sulphide, di-2-hydroxy-, A., II,

88-Di-n-heptylbutyric acid, and its methyl ester, A., II, 180.

ββ-Di-n-heptylbutyric acid, a-cyano-, ethyl ester, A., II, 180.

 $\beta\beta$ -Di-n-heptylbutyronitrile, A., II, 180. 9:10-Di-n-heptyl-9:10-dihydrophenanthrene-9:10-diol, A., II, 193.

3:3'-Di-n-heptyldicyclopentyl, A., II, 187. Di-n-hexadecylamine, hydrochloride, A., II, 35. Dicyclohexadienes, constitution and Raman spectra of, A., I, 267.

 $N^1:N^4$ -Dihexahydrobenzoylsulphanilamide, II, 365.

2:6-Dihexahydrobenzylcyclohexanol, phenylurethane of, A., II, 372.

a β -Dihexahydrocarvacrylethane, A., II, 41. N^1 : N^4 -Dihexoylsulphanilamide, A., II, 365. Dicyclohexyl sulphide, 2-amino-, and its hydro-

chloride, A., II, 335. 2-hydroxy-, A., II, 335.

di-2-hydroxy-, and its diacetate, A., II, 154.

and its ethyl and diethyl ethers, A., II, 335.

disulphide, di-2-amino-, and its 'hydrochloride, A., II, 335.

di-2-hydroxy-, A., II, 335. Dicyclohexylamine, 2-oximino-, A., II, 372. $\alpha \gamma$ -Di-p- $cyclohexylbenzylaminopropan-<math>\beta$ -ol,

9:10-Di-n-hexyl-9:10-dihydrophenanthrene-9:10-diol, A., II, 193.

1:2:5:6-Dicyclohexylidene-3:4-anhydroglucofuranose, A., II, 34.

Di-m-cyclohexylphenyl-p-tert.-butylphenylmethyl chloride, A., II, 329.

Di-m-cyclohexylphenyl-p-cyclohexylphenyl-methyl chloride, A., II, 329.

Di-p-cyclohexylphenyl-m-cyclohexylphenylmethyl chloride, A., II, 329.

s-Dicyclohexylselenocarbamide, A., II, 216. Dicyclohexylsulphamic acid, and its sodium salt, A., II, 158.

Dicyclohexyltoluene, A., II, 123.

2-Dicyclohexylylcarbimide, A., II, 294. Dihydantoins, A., II, 349.

s-Dihydnocarpylthiocarbamide, A., II, 183. 4^{4b:5}-Dihydroabietic acid, and its oximinolactone. A., II, 344.

Dihydroanhydromonocrotalamide, A., II, 147. 9:10-Dihydroanthracenecarboxylic acid, esters, anæsthetic and spasmolytic action of, A., III,

9:10-Dihydroanthracene-9-carboxylic acid. esters, hydrochlorides, A., II, I6.

9:10-Dihydroanthracene-9:10-dicarboxylic acid, di-β-diethylaminoethyl ester, hydrochloride, A., II, 16.

and -β-carotenes, cis-trans-5:6-Dihydro-aisomerisation of, A., II, 9. structure of, A., II, 9.

Dihydrodehydrodeoxodiginigenin, and its oxime, A., II, 230.

Dihydrodeoxodiginigenin, and its acetate, A., II,

Dihydrodeoxydeoxodiginigenin, A., II, 230.

Dihydrodeoxyvomicidine II, A., II, 240. Dihydrodeoxyvomicine, A., II, 240.

Dihydrodeoxyvomicine II, and its hydrochloride, A., II, 240.

Dihydrodeoxyvomicine II, iodo-, hydriodide, A., II, 240.

4:7-Dihydro-1:2:5:6-dibenzindolizine, 3':4':3"':4"-tetrahydroxy-, tetraacetyl derivative, A., II, 203.

9:10-Dihydro-1:2:3:4-dibenzphenanthrene, picrate, A., II, 10.

Dihydrodiginigenin, monoacetate, semicarbazone of, A., II, 231.

2:3-Dihydroegonol, 4-bromo-3-nitro-2-hydroxy-, A., II, 167.

Dihydroergocornine, A., II, 86. Dihydroergocristine, A., II, 86. Dihydroergocryptine, A., II, 86.

Dihydroergosine, A., II, 86.

Dihydroergotamine, and its derivatives, A., II, Dihydroeugenol, and its derivatives, A., II,

Dihydroeuphol, and its acetate and benzoate, A.,

II, 244. Dihydro-a-euphorbyl acetate, A., II, 244.

5:16- and 6:15-Dihydrohexacenes, A., II, 364.

2:3-Dihydroindole-2-carboxylic 2:3:5-trichloro-3-hydroxy-, methyl ester, A., II, 365.

Dihydrolanostene, A., II, 270.

isoDihydrolanostine, A., II, 270. Dihydrolavangetin, A., II, 167. Dihydrolycorenine, A., II, 64.

d(-)-Dihydrolyserghydrazide, A., II, 86. d(-)-Dihydrolysergic acid, A., II, 86.

ar-Dihydro-2-methoxynaphthalene, A., II, 367. Dihydromethyl-a-ionol, and its acetate, A., II,

103. Dihydromorphinone hydrochloride.

Dilaudid. Dihydromyrcene, additive halogenation of, A.,

II, 187. di- and tetra-chlorides, A., II, 188.

Dihydromyrcene, bromo-, A., II, 188. nitro-, A., II, 188.

1:4-Dihydro-1-naphthoic acid, β -diethylamino-ethyl ester, hydrochloride, A., II, 16.

trans.-1:2-Dihydrophthalic acid, electrolysis of, A., II, 362.

Dihydrotachysterol, antirachitic effectiveness of, A., III, 201.

effect of, on calcium and phosphorus metabolism of chick, compared with vitamin- D_2 and $-D_3$, A., III, 42.

- Dihydrotachysterol, pathogenesis and effects of, in relation to calcium and phosphorus metabolism, A., III, 606.
- treatment with, of hypoparathyroidism in pregnancy, A., III, 807. See also A.T.10.
- Dihydroxotetrachloroplatinic acid as reagent for tin, A., I, 133.
- 2:5-Dihydro-m-xylene, nitrolpiperidine nitrosochloride of, A., II, 368.
- aδ-Di-2-Δ2-iminazolinylbutane, picrate of, A., II,
- 2:3-Di-(2':2"-indolylsulphido)-3:3':3"trimethylindole, and its hydrochloride, A., II,
- Di-inene reaction, tricyclic compound obtained by, A., II, 101.
- Diketen, structure of, A., I, 4.
- 7:12-Diketo-3-acetoxycholanic acid, ethyl ester, A., II, 196.
- $\beta\beta'$ -Diketo-acids, esters, preparation of, A., II, 211.
- 1:3-Diketo-4-aminohydrindene-2-acetic acid, A., II. 23.
- γζ-Diketo-ζ-m-anisylheptoic acid, A., II, 18. 7:12-Diketo-3-benzoyloxycholanic acid, ethyl ester, A., II, 196.
- 3:5-Diketo-6-benzyl-1:2:4-triazine, 2:4-dichloro-, A., II, 364.
- Di-5-keto-6-benzyl-1:2:4-triazinyl phide, and its copper salts, A., II, 204.
- 3:11-Diketobisnorcholanic acid, methyl ester, A., II, 265.
- 3:12-Diketobisnorcholanic acid, methyl ester, A., II, 264.
- 3:12-Diketo-49-bisnorcholenic acid. methyl ester, A., II, 265. 1:2-Diketo-3-tert.-butylhydrindene,
- and its quinoxaline, A., II, 17.
- aβ-Diketo-n-butyric acid β-p-nitrophenylhydrazone, A., II, 203.
- 3:7-Diketocholanic acid, 12-hydroxy-, A., II, 196.
- ethyl ester, A., II, 196. 2:3-Diketocholestane, nitrone of, and its enolacetate, A., II, 230.
- βε-Diketo-a-cyanohexane-aζζ-tricarboxylic acid, triethyl ester, and its copper derivative, A., II,
- 410:11-13:18-12:19-Diketo-2:x-diacetoxyoleadiene-28-carboxylic acid, methyl ester, A., II, 109.
- 2:5-Diketo-3:6-di-β-benzylthiolethylpiperazine, A., II, 348.
- 3:5-Diketo-4:6-dibenzyl-1:2:4-triazine,
- 2-chloro-, A., II, 365. 2:5-Diketo-3:6-di-8-bromoethylpiperazine, II, 348.
- 2:6-Diketo-3:7-dicarbethoxy-4:8-dimethylbenz[1,2-6-4:5-6'-]tetrahydrodifuran. Bis-1'-kcto-2'-carbethoxy-1':2'-dihydrofurano-1':2'-2:3-1":2":5:6-p-xylene.
- 2:5-Diketo-3:6-di-β-chloroethylpiperazine, reactions of, A., II, 348.
- Diketodiginane, and its bis-2:4-dinitrophenylhydrazone, A., II, 231.
- Diketodihydrolanostenone, A., II, 269.
- Diketodihydrolanosterol, and its acetate, A., II,
- 2':3'-Diketo-4:6-dimethoxy-1:2-cyclopentenonaphthalene, and its quinoxaline, A., II, 18.
- 2:8-Diketo-4:8-dimethylbenz[1,2-6-4:5-6'] tetrahydrodifuran. See Bis-1'-keto-1':2'-dihydrofurano-1':2'-2:3-1'':2''-5:6-p-xylene.
- 2:4-Diketo-3-ay-dimethyl-Δβ-butenylidenechroman, A., II, 345.
- 6:3'-Diketo-2:5-dimethyldecahydro-1:2cyclopentenonaphthalene-x-a, A., II, 19.
- 3:6-Diketo-1:2-dimethylcyclohexane-1:2dicarboxylic acid, di-p-nitrophenylhydrazone, A., II, 377.
- 3:6-Diketo-1:2-dimethylindolo-1':2'-4:5tetrahydropyrazine, A., II, 310.
- 1:4-Diketo-2:3-dimethyltetrahydropyrazino[1,2a]indole. See 3:6-Diketo-1:2dimethylindolo-1':2'-4:5-tetrahydropyrazine.
- 2:5-Diketo-3:6-di-8-morpholinoethylpiperazine, A., II, 348.

- $a\zeta$ -Diketo- $a\zeta$ -di-3-nitro-4-methoxyphenylhexane, A., II, 296.
- 2:5-Diketo-3:6-di-β-piperidinoethylpiperazine, A., II, 348.
- 2:5-Diketo-3:6-di-β-thiocarbamidopiperazine, A., II. 348.
- 2:5-Diketo-3:6-di-β-thiolethylpiperazine, A., II, 348.
- 2:5-Diketo-3:6-divinylpiperazine, A., II, 348. △10:11-13:18-12:19-Diketo-2-hydroxy-x-
- acetoxyoleadiene-28-carboxylic acid, methyl ester, A., II, 109.
- 7:8-Diketo-13-hydroxy-2-acetoxyoleanane-28carboxylic acid, enol of, 13:28-lactone, A., II, 109.
- 2:4-Diketo-3-2':4'-dihydroxybenzylidenechroman, A., II, 166.
- 410:11-17:18-12:19-Diketo-2:x-dihydroxy-28noroleadiene, and its 2-acetate and pyridazine, A., II, 109.
- Di-(1-keto-5-methoxy-2-hydrindenylidene methyl)hydroxylamine, A., II, 226.
- 2':3'-Diketo-4-methoxy-1:2-cyclopentenonaphthalene, A., II, 18.
- 1:4-Diketo-2-methyl-42:7-naphthitadiene-5carboxylic acid, methyl ester, A., II, 139.
- 1:4-Diketo-2-methyl-42:7-naphthitadiene-10carboxylic acid, cyclohexyl and methyl esters, A., II, 139.
- Diketones, A., II, 48.
 - alicyclic, spectra of, absorption, ultra-violet, A., II, 138.
- cyclic, reactions and enclisation of, A., II,
- β-Diketones, asymmetric, reactivity of, carbonyl groups in, A., II, 236.
 - cyclic, reaction of, with Grignard reagents, A., II, 299.
- synthesis of, A., II, 322.
- 3:7-Diketo-12-p-nitrobenzoyloxycholanic ethyl ester, A., II, 196.
- 3:7-Diketo-12-3':5'-dinitrobenzoyloxycholanic acid, ethyl ester, A., II, 196.
- Di-(5-keto-1-p-nitrophenyl-3-methyl-4pyrazolidene), A., II, 203.
- ay-Diketo-n-octoic acid, and its derivatives, metabolism and synthesis of, A., II, 379,
- △12:13-2:x-Diketo-oleanene-28-carboxylic methyl ester, oxime and semicarbazone, A., II. 109.
- 3:5-Diketo-6-phenylethyl-1:2:4-triazine, 2:4-dichloro-, A., II, 365.
- 2:5-Diketo-3-salicylidenechroman, A., II, 166. 6:17-Diketo-6:8:15:17-tetrahydro-7:16-
- diazanaphthacene, and 1-amino-, and its benzoyl derivative, and 1-nitro-, A., II, 84.
- Dilantin, degradation products of, A., III,
- Dilatometers, differential, C., 207. recording, C., 104.
- Dilatometry, equipment for, C., 151. Dilaudid, as analgesic, A., III, 429
- Dilinoleic acid, superpolyesters, linear, A., II, 180.
- s-Di-l-methylselenocarbamide, A., II, 216. 1:1-Dimercuri-6'-methylphenylcyclohexane, 1:1-di-2':4'-di- and -2':4':6'-tri-hydroxy-,
- 2'-mono- and 2':6'-di-acetyl derivatives, A., II, 216.
- Dimerisation in solutions, A., I, 281. statistical mechanics of, A., I, 37.
- Dimesitylacetylene, A., II, 334. β_{y} -Dimesitylbutane, A., II, 263.

derivatives of, A., II, 334.

- $a\beta$ -Dimesitylethane, $a\beta$ -dichloro-, A., II, 334. BB-Dimesitylethyl alcohol, and its benzoate, A.,
- Di(mesitylmethylcarbinyl) ether, A., II, 263.
- ay-Dimesitylpropane-aβ-dione, preparation and properties of, A., II, 102. ay-Dimesitylpropane-aβ-dione, y-bromo-, and its
- enol, A., II, 102. ay-Dimesityl-Ap-propen-a-one, y-bromo-B-acetyl B-hydroxy-, β-acetyl β-hydroxy-, A., II, 102. derivative, and
- aß-Dimesitylvinyl alcohol, esters, A., II, 333. $\beta\beta$ -Dimesitylvinyl alcohol, A., II, 333.

- 88-Dimesitylvinyl ethyl and methyl ethers, A., II. 334.
- Dimethanesulphonethylimide, A., II, 92.
- Dimethanesulphonimide, A., II, 92.
- Dimethanesulphonmethylimide, A., II, 92. ωω'-Dimethionine, A., II, 122.
- 6:7-Dimethoxy-3-acetyl-2-methylquinoline, and
- its picrate, A., II, 308. 6:7-Dimethoxy-3-acetylquinoline,
- 2:4-dinitrophenylhydrazone, A., II, 307.
- 7:8-Dimethoxy-3-acetylisoquinoline, 1-chloro-, A., II, 201,
- 6:7-Dimethoxy-3-acetylquinoline-2-carboxylic acid, and its ethyl ester, A., II, 307.
- 4:4'-Dimethoxy-a-n-amylstilbene, A., II, 128. 4:3':4'-Dimethoxyanilinopyrimidine, 2-amino-,
- hydrochloride, A., II, 349. 2:3-Dimethoxybenzaldehyde, azlactone of, A.,
- II. 272. 3':4'-Dimethoxybenz-1':6'-2:3-4-azafluorenone,
- and its 2:4-dinttrophenylhydrazone, A., II, 308.
- 4:5-Dimethoxybenzene-1:3-dicarboxylic acid. 2-bromo-, diphenyl ester, A., II, 167.
- 3:4-Dimethoxybenzoic acid, 2-amino-, 2-acetyl derivative, A., II, 204.
- 4:4'-Dimethoxybenzophenone-3:5:3':5'tetracarboxylic acid, and its tetramethyl ester and oxime, A., II, 160.
- 6:7-Dimethoxy-3-benzoyl-2-methylquinoline, A., II. 308.
- β -3:4-Dimethoxybenzoylpropionic acid, A., II, 372.
- 6:7-Dimethoxy-3-benzoylquinoline, A., II, 307.
- 6:7-Dimethoxy-3-benzoylquinoline-2-carboxylic acid, and its ethyl ester, A., II, 307.
- γδ-Di-p-methoxybenzyl-n-hexane, A., II, 13. $\gamma\delta$ -Di-p-methoxybenzyl-n-hexane- β -one, A., II,
- 13. a-3-4:-Dimethoxybenzylidene-n-heptaldehyde, and its semicarbazone, A., II, 222.
- 4-3':4'-Dimethoxybenzylidene-2-methylpyrazol-5-one, 4-5'- and 6'-bromo-, 4-5'-chloro-, and
- 4-5'- iodo-, A., II, 59. 6:7-Dimethoxy-2-benzylnaphthalene, A., II, 94. aβ-Di-p-methoxybenzyl-n-valeric acid, α-cyano-,
- ethyl ester, A., II, 13. ap-Di-p-methoxybenzyl-n-valeronitrile, A., II. 13.
- 4:4'-Dimethoxy-α-isobutylstilbene, A., II, 128. 2:4-Dimethoxy-3-carboxy- β -methylcinnamic
- acid, A., II, 200. 3:4-Dimethoxy-6-chloromethylphthalide, A., II, 370.
- 7:8-Dimethoxy-3-a-chlorovinylisoquinoline, 1-chloro-, A., II, 201.
- 3:4-Dimethoxycinnamic acid, a-amino-, acetyl derivative, and 5-bromo-a-amino-, benzoyl derivative, and its methyl ester, A., II, 60. 4:4'-Dimethoxy-N-desylaniline, A., II, 348.
- 3:6-Dimethoxydibenzfuran, and its derivatives,
- A., II. 303. 2:5-Dimethoxy-3:6-di(chloromethyl)-p-xylene, A., II, 55.
- 2:2'-Dimethoxy-a\beta-diethylstilbene, A., II, 129. 6:6'-Dimethoxy-3:4-dihydro-1:2'-dinaphthyl, A.,
- II. 295. 1:4-Dimethoxy-3:6-dimethylbenzfuran-2-
- carboxylic acid, 5-bromo-, A., II, 54. 3:6-Dimethoxy-2:5-dimethylbenzyl chloride. 4-bromo-, A., II, 54.
- cyanide, 4-bromo-, A., II, 54. Dimethoxy-4:4'-dimethyldiphenyl, tetra-
- hydroxy-, tetraacetyl derivative, A., II, 49. 2:2'-Dimethoxy-4:4'-dimethyldiphenyl-3:6:3':6'diquinone, A., II, 49.
- 2:5-Dimethoxy-2:5-dimethyl-3:6-dipropenyl-1:4-dioxan, A., II, 358.
- 6:7-Dimethoxy-2:3-dimethylnaphthalene,
- 1:4-dihydroxy-, 1:4-diacetate, A., II, 372. 3:3'-Dimethoxy-1:1'-dinaphthyl,4:4'-dihydroxy-, and its 4:4'-quinone, A., II, 164.
- 6:6'-Dimethoxy-1:2'-dinaphthyl, A., II, 295. 4:4"-Dimethoxydiphenyl, A., II, 256.
- 1:4-Dimethoxy-9:10-diphenylanthracene, photo-
- chemical properties of, A., I, 290. 3:4-Dimethoxydiphenyl-6:3'-dicarboxylic A., II, 64.

- 1:6(or 1:8)-Dimethoxy-9:9-diphenylfluorene, A., IÌ, 114.
- mm'- and pp'-Di(methoxydiphenylmethyl)azobenzenes, A., II, 253.
- pp'-Di(methoxydiphenylmethyl)stilbene, A., II,
- 2:2'-Dimethoxy-a-ethyldeoxybenzoin, A., II, 129. aß-Di-4-methoxy-2-ethylphenylethane, A., II, 13. 4:4'-Dimethoxy-\(\beta\)-ethylstilbene, a-chloro-, A., II. 129.
- 6:6'-Dimethoxy-1:2:3:4-3':4'-hexahydro-1:2'-dinaphthyl, A., II, 295.
- 4:4'-Dimethoxy-a-cyclohexylstilbene, A., II, 128. 3:4-Dimethoxy-6-methylacetophenone, A., II,
- 3:4-Dimethoxy-6-methylacetophenone, oximino-, A., II, 370.
- 4:4'-Dimethoxy-a-methyl-\(\mu\)-allylstilbene, A., II, 129.
- 2:3-Dimethoxy-5-methylbenzaldehyde, and its oxime, A., II, 370.
- 2:3-Dimethoxy-5-methylcinnamic acid, A., II, 370.
- trans-2:4-Dimethoxy-a-methylcinnamic acid. and its ethyl ester, A., II, 161.
- 7:8-Dimethoxy-2-methyl-3-(δ-diethylamino-amethylbutyl)-4-quinazolone, and its trihydrochloride, A., II, 204.
- β-2:3-Dimethoxy-5-methylphenylpropionic acid, A., II, 370.
- 3:4-Dimethoxy-6-methylphthalide, A., II, 370.
- 4:4'-Dimethoxy-α-methyl-β-n-propylstilbene, A., П. 129.
- 7:8-Dimethoxy-2-methyl-4-quinazolone, and its hydrochloride, A., II, 204.
- 6:7-Dimethoxy-2-methylquinoline, A., II, 308. 4:4'-Dimethoxy-a-methylstilbene, A., II, 128.
- 6:6'-Dimethoxy-1:2:3:4 :2':3':4'-octahydro-1:2'-dinaphthyl, A., II, 295.
- a-3:4-Dimethoxyphenacylcinnamic acid, and its methyl ester, A., II, 94.
- a-3:4-Dimethoxyphenacyl-8-phenylpropionic acid, and its methyl ester, A., II, 94. 2:5-Dimethoxyphenylacetic acid, 3-bromo-, A.,
- II, 346.
- 2:3-Dimethoxyphenylacetonitrile, A., II, 272. 3:4'-Dimethoxy-2-phenylbenzopyrylmm salts and derivatives, A., II, 110.
- y-3:4-Dimethoxyphenyl-a-benzylbutyric acid, A., II, 94.
- γ -3:4-Dimethoxyphenyl- β -benzyl-n-butyric acid, A., II, 94.
- 3:4-Dimethoxyphenylbenzylidenecrotonolactone, A., II, 94.
- $\beta\beta$ -Dimethoxy- δ -phenyl-n-butan- γ -ol, A., II, 338.
- a-3:4-Dimethoxyphenylethane, aβ-dibromo-βnitro-, A., II, 257.
- 2-3':4'-Dimethoxyphenyl-3-ethylindone, and its
- phenylhydrazone, A., II, 163. dl-y8-Di-(4-methoxyphenyl)hexane, γδ-di-3-amino-, and its diacetyl derivative,
- A., II, 217. 2-3':4'-Dimethoxyphenylindane-1:3-dione,
- II. 163.
- 4-(2':3'-Dimethoxyphenyl)-1-methylpiperidine, and its picrate, A., II, 272. 4-(2':3'-Dimethoxyphenyl)-1-methylpiperidine-4-
- nitrile, A., II, 272. γ-3:4-Dimethoxyphenylpropan-a-ol-β-one, and
- its semicarbazone, A., II, 262.
- a-3:4-Dimethoxyphenylpropan-β-one, a-bromoand y-chloro-, allylic and dismutation rearrangements of, A., II, 162. -hydroxy-, synthesis of, A., II, 262.
- 3:4-Dimethoxyphenylpyruvic acid, 5-bromo-, and its methyl ether, A., II, 60.
- 8:7-Dimethoxy-3-phenylquinoline, A., II, 307. 6:7-Dimethoxy-2-phenylquinoline-3-carboxylic acid, and its derivatives, A., II, 308.
- 6:7-Dimethoxy-3-phenylquinoline-2-carboxylic acid. A., II, 307.
- 2:3-Dimethoxy-5-propenylbenzoic acid, A., II, 161.
- 3:4-Dimethoxypropiophenoneazine, A., II, 13.
- 4:4'-Dimethoxy-α-n-propylstilbene, A., II, 128. 4:4-Dimethoxy-a-isopropylstilbene, A., II, 128. Dimethoxyquinazolones, synthesis of, A., II, 204.

- 6:7-Dimethoxyquinoline, and its derivatives, A., II, 307. salts of, A., II, 23.
- 6:7-Dimethoxyquinoline, 5:8-diamino-, and its derivatives, and 5:8-dinitro-, A., II, 24. 2-hydroxy-, A., II, 308.
- 6:7-Dimethoxyquinoline-2-aldehyde, phenylhydrazone, and its hydrochloride, A., II, 308. 6:7-Dimethoxyquinoline-2-aldoxime, and
- 6:7-Dimethoxyquinoline-2-carboxylic acid, A., II. 307.
- 6:7-Dimethoxyquinoline-2-nitrile, A., II, 308. 3:4'-Dimethoxystilbene, A., II, 130.
- 3':5'-Dimethoxystilbene, 4-hydroxy-, and its methyl ether, A., II, 45.
- 4:4'-Dimethoxystilbene, $\alpha\beta$ -dichloro-, A., II, 129. 3:4-Dimethoxystyrene, β -bromo- β -nitro-, A., II,
- β-nitro-, A., II, 257.

derivatives, A., II, 307.

- 4:4"-Dimethoxy-m-terphenyl, A., II, 257. 6:6'-Dimethoxy-1:2:3:4-tetrahydro-1:2'-
- dinaphthyl, A., II, 295. 4:6-Dimethoxy-5:6:7:8-tetrahydro-1:2-
- cyclopentenonaphthalene-3'-aeetic acid, II, 18.
- 4:4'-Dimethoxy-3:3':5:5'-tetra(hydroxymethyl)diphenylmethane, A., II, 160. 2:5-Dimethoxytoluene, 4-amino-, and its acetyl
- derivative, A., II, 303.
- 4-amino-, 3:5-Dimethoxytoluene, hydrogen sulphate of, 4-iodo-, 4-iodohydroxy-, acetyl derivative, and 4-nitro-, A., II, 49.
- 2:5-Dimethoxy-p-toluic acid, A., II, 303.
- 2:5-Dimethoxy-p-tolunitrile, A., II, 303. 4:6-Dimethoxytoluquinone, antibacterial action
- of, A., III, 831. 2:3-Dimethoxytriphenylcarbinol, A., II, 114.
- 2:5-Dimethoxy-p-xylene, 3-bromo-, A., II, 54. 3:6-Dimethoxy-p-2-xylylacetic acid, 5-bromo-, A., II, 54.
- 2:5-Dimethoxy-p-xylylene-3:6-diacetic acid, and its 3:6-dinitrile, A., II, 54. Dimethyl ether. See Methyl ether.
- sulphide, thallium salt, A., II, 66.
- aa-Dimethylacetoacetic acid, y-bromo-, methyl ester, reaction of, with sodium cyanide, A., II,
- 232.4:2'-Dimethyl-3-acetyl-7:8-coumarin-y-pyrone, A., II, 200.
- Di-2-methyl-6-acetyltetrahydro-2-pyranyl peroxide, A., II, 198.
- bp-Dimethylacrylic acid, α-bromo-, ethyl ester, A., II, 323.
- 1: $N^{(6)}$ -Dimethyladenine, picrate, A., II, 112. 2:9-Dimethyladenine, A., II, 350.
- 4:7-Dimethyl-6-allylcoumarin, 5-hydroxy-, and its mercuric chloride derivative, A., II, 270.
- 4:7-Dimethyl-8-allylcoumarin, 5-hydroxy-, A., II, 270.
- Dimethylamine, viscosity of, A., I, 149.
- Dimethylaminoacetophenone, alkyl chlorides of, hydroxypropylene ketals of, A., II, 34.
- β-Dimethylamino-2-acetoxy-4-methoxypropiophenone, hydrochloride, A., II. 272.
- B-Dimethylamino-2-acetoxy-4-methoxypropiophenone, a-bromo-, hydrobromide, A., II, 272.
- 5-Dimethylaminoacridine, hydrochloride, A., II,
- 9-p-Dimethylaminoanilino-2-methoxyacridine, 6-chloro-, A., II, 83.
- 2-p-Dimethylaminoaniloacetylindole, N'-oxido, A., II, 237.
- p-Dimethylaminoazobenzene, carcinogenicity of, in diets containing hydrogenated coconut,
- A., III, 662. effect of, fission products of, on rat liver tumours, A., III, 118.
- p-Dimethylaminobenzaldehyde, rea with cyclic primary amines, C., 86. reaction
- 3:3'-Dimethylaminobenzylidenebis-4-hydroxycoumarin, A., II, 166.
- p-Dimethylamino-p'-carboxyazobenzene, genic protein complexes with, A., III, 704.
- p-Dimethylaminodibenzylamine methochloride hydrochloride, A., II, 46.
- a-Dimethylamino-ββ-dimethylacrylic acid, ethyl ester, and its hydrochloride, A., II, 323.

- 4-Dimethylaminodiphenyl, action on, of nitrous acid, A., II, 190.
- 4-Dimethylaminodiphenyl, 3:5-diamino-, A., II, 190.
 - 3:5-dinitro-, A., II, 190.
- 3-nitro-5-amino-, hydrochloride, A., II, 190.
- 2:4-Dimethyl-3-a-aminoethylpyrrole-5carboxylic acid, benzoyl derivative, ethyl ester, A., II, 377.
- β-Dimethylamino-2-hydroxy-4-methoxypropiophenone, a-bromo-, hydrobromide, A., II, 272.
- 2-Dimethylaminomethylcyclohexanone methiodide, and its 2:4-dinitrophenylhydrazone, A., II, 163.
- 2-Dimethylaminomethyl-6-methoxycoumaranone hydrochloride, picrate of, A., II, 272.
- Dimethylaminomethylisopropylmalonic acid, A., II, 182.
- 3-Dimethylaminophenonaphthoxazine-7:9and -9:12-disulphonic acids, and their alkali salts, A., II, 313.
- N-p-Dimethylaminophenyl-N'-benzylthiocarhamide, A., II, 107.
- p-Dimethylaminophenylboric acid, A., II, 66. N-p-Dimethylaminophenyl-N'-bornyl-
- carbamide, and its derivatives, A., II, 107.
- N-p-Dimethylaminophenyl-N'-bornylcarbodiimide, A., II, 107.
- N-p-Dimethylaminophenyl-N'-bornylthiocarbamide, A., II, 107.
- β -(p-Dimethylaminophenyl)butyrophenone, y-nitro-, and its oxime, A., II, 81.
- 4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone, 1:1-additive compound of, with phenylethylhydantoin, A., II, 111.

 N-p-Dimethylaminophenyl-N'N'-dimethyl-
- sulphamide, A., II, 364.
- N-p-Dimethylaminophenyl-N'-1-menthylcarbamide, A., II, 106.
- N-p-Dimethylaminophenyl-N'-1-menthyl-
- carbodi-imide, A., II, 106. N-p-Dimethylaminophenyl-N'-1-menthylseleno-
- carbamide, A., II, 216. N-p-Dimethylaminophenyl-N'-1-menthylthiocarbamide, A., II, 106.
- 1-3-(p-Dimethylaminophenyl)-5-methyltetrahydro-1:3:5-thiadiazine, A., II, 206.
- p-Dimethylaminophenylphenylazoxysulphone, A., II, 331.
- p-Dimethylaminophenyl-p-tolylazoxysulphone, A., II, 331.
- $3-\beta$ -Dimethylaminopropionyl-2:5-dimethylfuran hydrochloride, A., II, 173.
- 2-β-Dimethylaminopropionyl-5-methoxyphenoxyacetic acid, and its ethyl ester, A., II, 272.
- α -p-Dimethylamino- Δ^{α} -propylene, β -nitro-, A., II. 293.
- Di-2-methyl-4-amino-5-pyrimidylmethylamine, tetrahydrochloride, A., II, 349.
- p-Dimethylaminostyrene, a-bromo- β -nitro-, and β-nitro-, A., II, 293.
- 5-Dimethylaminostyryl-3-methylisooxazole, 4-nitro-, A., II, 238. 2-p-Dimethylaminostyrylperinaphtha-1:3-
- diazine, and its derivatives, A., II, 26.
- ψ -2-p-Dimethylaminostyryl-1- γ -phthalimidopropylquinolinium bromide, 6-amino-, 6-acetyl derivative and hydrobromide, A., II, 57.
- ON-Dimethylanalobine, synthesis of, and its derivatives, A., II, 355. dl-ON-Dimethylanalobinemethine, its
- picrate, A., II, 355. Dimethylaniline, determination of, in mixtures
- of aniline, methylaniline, and dimethylaniline, C., 118. reaction of, with nitric acid, A., II, 216.
- Dimethylanilinediazidocopper, p-nitroso-, A., I,
- 2:6-Dimethyl-1:5-anthrazoline, and its derivatives, A., II, 278.
- 2:6-Dimethyl-1:5-anthrazoline-3:7dicarboxylic acid, A., II, 278.
- a\beta-Dimethyl-d-araboascorbic acid, and its $\delta\epsilon$ -di-p-nitrobenzoyl derivative, A., II, 213.
- 4:4'-Dimethyl-2-azobenzthiazole, A., II, 146.

6:6'-Dimethyl-2-azobenzthiazole, A., II, 146. 4:4'-Dimethyl-2-azoxybenztriazole, A., II, 146. 6:6'-Dimethyl-2-azoxybenztriazole, A., II, 146. 9:10-Dimethyl-1:2-benzanthracene, fluorescence

of, A., I, 3. 2:2'-Dimethylbenzdianthrene, A., II, 300.

1:4-Dimethylbenzene, 2:5-dibromo-1:4-di-(dibromo-), A., II, 278. 2:5-dichloro-1:4-di(trichloro-), A., II, 278. 1:4:2:3:5:6-hexachloro-, and its dianilino-

compounds, A., II, 278. 3:4-, 2:4-, and 2:5-Dimethylbenzene-1sulphonxanthylamides, A., II, 156.

and N-p-Dimethylbenzhydrylamine, a-naphthylearbamyl derivative, A., II, 258. 2:6-Dimethyl-lin.-p-benzodipyridine-3:7-

dicarboxylic acid. See 2:6-Dimethyl-1:5anthrazoline-3:7-dicarboxylic acid.

2:4-Dimethylbenzophenone, semicarbazone, A., II, 223.

3:5-Dimethylbenzophenone, and its semicarbazone, A., II, 223.

3:6-Dimethyl-1:4-benzoquinon-2-ylmalonic acid, 5-bromo-, diethyl ester; and its 1:4-benzoquinol, A., II, 54.

2-2':4'-Dimethylbenzoyl-3:6-dimethylbenzoic acid, and its methyl ester, n- and ψ -forms, A., II, 298.

 N^{1} -3:4-Dimethylbenzoylsulphanilamide. Irgafen.

2:4-Dimethyl-5:6-benzquinoline, hydrochloride and picrate, A., II, 235.

2:4-Dimethyl-6:7-benzquinoline, A., II, 235. 2:4-Dimethyl-6:7-benzquinoline-x-sulphonic

acid. A., II, 235. o-aa-Dimethylbenzylbenzamide, A., II, 10. o-aa-Dimethylbenzylbenzophenoneimine hydro-

chloride, A., II, 10. -2:5-Dimethylbenzylethylene-N-2:4and diamines, A., II, 366.

2:5-Dimethyl-3:6-bisdicarbethoxymethyl-pbenzoquinone, and the p-benzoquinol, A., II,

 $d-\alpha\beta$ -Dimethylbutaldehyde, 2:4-dinitrophenyl-

hydrazone, A., II, 341. l-aβ-Dimethylbutaldehyde, and its 2:4-dinitro-

phenylhydrazone, A., II, 341. volume relations of, A., I, 32. ββ-Dimethylbutane,

2:6-Dimethyl-4-tert.-butylphenol, A., II, 192. β -($\beta'\beta'$ -Dimethylbutyramido)- α -phenylethanesulphome acid, β -($\alpha'\gamma'$ -dihydroxy-), A., II, 190.

2:6-dichloro-1- $\beta\beta$ -Dimethyl-n-butyric acid, phenyl ester, A., II, 128. ββ-Dimethyl-n-butyric ac

acid, ay-dihydroxy-, y-hydroxypropylamide, vitamin activity of, A., III, 200.

r- $\beta\beta$ -Dimethyl- γ -butyrolactone, a-hydroxy-, A., II, 181.

3:5-dichloro-4- $\beta\beta$ -Dimethyl-n-butyrophenone, hydroxy-, A., II, 128.

3:5-Dimethylisobutyrophenone, 4-hydroxy-, A., II, 128.

NN-Dimethyl-N-n-cetylhydrazinium iodide, and methosulphate, A., II, 184.

1:3-Dimethyl-5-chloromethylpyrrole-2:4dicarboxylic acid, 4-ethyl-2-methyl ester, A., II, 351. ethyl-4-methyl ester, A., II, 351.

a-(2:2-Dimethylchromanyl-3)-8-(2:3-dimethylchromanyl-2)-ethane, A., II, 22.

3:5-Dimethylcoumaran-1-one, 4-hydroxy-, A., II. 346.

3:6-Dimethylcoumaran-1-one, 5-bromo-4hydroxy-, and its 4-acetate, A., II, 54. 4-hvdroxy-, A., II, 55.

3:6-Dimethylcoumaran-1-one-2-carboxylic acid, 5-bromo-, ethyl ester, A., II, 54. 4:7-Dimethylcoumarin, 5-allyl ether, A., II,

270.

4:4'-Dimethyl-7:8-coumarin-a-pyrone, A., II,

Dimethyl-\psi-cumene, dichloro-, A., II, 199. 1:N(6)-Dimethylcytosme, picrate of, A., II, 112. dl-2:4-Dimethyldecahydro-1:8-naphthyridine, and its diacetyl derivative, A., II, 237.

2:5-Dimethyldecahydrocyclopentenonaphthalene, 3':6'-dihydroxy-, A., II, 19. 1;12-Dimethyl-47:9(14)-decahydrophenanthrene, A., 1I, 255.

 $\beta\beta$ -Dimethyl-n-decane- $\gamma\epsilon$ -dione, A., II, 322. β_i -Dimethyl-n-decane- $\epsilon \eta$ -dione, A., II, 322. $\beta\delta$ -Dimethyldec- β -en- ϵ -yn- δ -ol, A., II, 178.

αδ-Dimethyl-y-deoxymannosaccharodiamide, A., II. 212.

 $a\delta$ -Dimethyl- γ -deoxymannosaccharo- $\beta\epsilon$ -lactone, methyl ester, A., II, 212.

10:10'-Dimethyldiacridylium nitrate, di- and tetrahydrates, A., II, 60.

16:17-Dimethyldibenzanthrone, A., II, 164. 6:15-Dimethylesodibenzanthrone, A., II, 164. Dimethyldihexylammonium methosulphate, A.,

II, 95. 2:4-Dimethyl-3:4-dihydro-1:8-naphthyrid-2one, A., II, 236.

dl-2:6-Dimethyl-5:6-dihydro-1:2-pyran, A., II. 270.

(+)-2:6-Dimethyl-5:6-dihydro-1:2-pyran, A., II, 270.

(-)-2:6-Dimethyl-5:6-dihydro-1:4-pyran, and its keto-alcohol, A., II, 270.

2:6-Dimethyl-5:6-dihydro-1:2-pyran-3carboxylic acid, A., II, 270. 4:7-Dimethyl- Δ^2 '-dihydropyrano-2':3'-5:6-

coumarin, A., II, 270.

 $\gamma\zeta$ -Dimethyl- $\beta\gamma$: $\delta\epsilon$ -dimethylenemannitol, A., II,

αζ-Dimethyldimethylenesorbitol, A., II, 119. 2:4-Dimethyl-1:3-dioxan, 6-hydroxy-, 6-acetate,

A., II, 233. 5:5-Dimethyl-2:4-diisopropyl-1:3-dioxan, 6-hydroxy-, 6-acetate, A., II, 233.

5:5'-Dimethyl-2:6-disopropyl-1:3-dioxan. 4-hydroxy-, A., II, 4.

4:4'-Dimethyldi-2-pyrrylmethane-3:5:3':5'tetracarboxylic acid, 3:5:3'-triethyl ester, A., II, 352.

4:4'-Dimethyldi-2-pyrrylmethane-3:5:3'tricarboxylic acid, triethyl ester, A., II, 352. Dimethylditetradecylammonium methosulphate,

A., II, 95. 4:4'-Dimethyl-2:2'-dithiazolyl, A., II, 280. 4:4'-Dimethyl-2:2'-dithiazolyl-5:5'-

dicarboxylic acid, and its diethyl ester, A., II,

 $\beta\beta$ -Dimethyldivinyl ketone, addition to, of hydrogen chloride, A., II, 322.

1:12-Dimethyldodecahydrophenanthrene, A., II, 255.

Dimethyl-n-dodecylamine, hydrochloride of, A., II. 35.

NN-Dimethyl-N-n-dodecylhydrazinium iodide, A. II. 184.

Dimethyldodecylsulphonium iodide, A., II, 90. $\gamma\delta$ -Dimethyldulcitol, $\gamma\delta$ -dihydroxy-, derivatives of, A., II, 118.

 $\beta\delta$ - $\gamma\epsilon$ -Dimethylene- α -deoxy-DL-xylitol, A., II,

Dimethyleneglucosaccharic acid, and its dimethyl ester, A., II, 121.

Dimethylene-l-idosaccharic acid, and its derivatives, A., II, 121, 321.

Dimethylenemannitol, at-diamino-, and its dihydrochloride and monohydrate, A., II, 184.

aζ-dichloro-, A., II, 184. $\beta y - \delta \epsilon$ -Dimethylenemannitol, and its derivatives,

A., II, 119. βy-δε-Dimethylenemannitol, aζ-diamino-, A., II,

184.

 $ay-\beta\delta$ -Dimethylene-D-epirhamnitol, A., II, 358. Dimethylenesaccharic acids, and their derivatives, epimerisation of, A., II, 121.

βγοε-Dimethylene sorbitol, and its derivatives, A., II, 119.

βγδε-Dimethylene sorbitol, αζ-dichloro-. A., II, 119. ay:βδ-Dimethylene-D-sorbitol, and its deriv-

atives, A., II, 286, 358. βδ:ye-Dimethylene-DL-xylitol, and its derivatives, A., II, 285.

 $\beta\delta$: $\gamma\epsilon$ -Dimethylene-L-xylitol, and its a-acetate, A., II, 286.

aldehydo-ay:βδ-Dimethylene-L-xylose, and its oxime, A., II, 286. $\beta\beta$ -Dimethyl- γ -en- ϵ -yn- β -ol, A., II, 178.

aβ-Dimethyl-d-erythronic acid, amide of, A., II,

3:9-Dimethyl-5:8-endoethylene-5:8:9:10tetrahydro-1:4-naphthaquinone, A., II, 138. 3:5-Dimethyl-5-ethyloxazolidine-2:4-dione, II. 382.

5:5-Dimethyl-3-ethyloxazolidine-2:4-dione, II, 382.

2:4-Dimethyl-5-ethylpyrrole-3-carboxylic acid. ethyl ester, A., II, 377. 3:3'-Dimethyl-6':7'-furocoumarone, A., II, 200.

Dimethylgallium borohydride, A., I, 22. Dimethylglyoxime, specification for, C., 196.

Dimethylguanine, salts, A., II, 112. $\beta\delta$ -, $\beta\zeta$ -, and $\gamma\delta$ -Dimethyl- Δ^{ac} -n-heptadienes, A., II, 209.

 $\beta \epsilon$ -Dimethyl- $\Delta \beta \xi$ -n-heptadiene, A., II, 209.

γδ-Dimethyl-n-heptane, A., II, 209. $\beta\zeta$ -Dimethylheptane- $\beta\zeta$ -diol- δ -one.

s-Triacetone dialcohol. δς-Dimethyl-n-heptan-y-one, and its hydantoin.

A., II, 248. o- $\beta\zeta$ -Dimethyl- Δ^c -(or $-\Delta^{\zeta}$ -)n-heptenyl- β' -hydroxy- $\gamma'\eta'$ -dimethyl- $\Delta^{\zeta'}$ -(or $-\Delta^{\eta'}$ -)octenyl-

benzene, o-a-hydroxy-, A., II, 218.

Dimethyl-n-hexadecylamine, A., II, 35. Dimethylhexadecylsulphonium iodide, A., II, 90. βε-Dimethylhexadienes, spectra of, Raman, A.,

I. 117. γγ-Dimethyl-Δ^{αε}-n-hexadiene, A., II, 209. βδ-Dimethyl-Δαγ-hexadienonitrile, A., II, 250.

7:12-Dimethyl-1:2:3:4:12:13-hexahydroxanthen, A., II, 22.

2:3-Dimethylcyclohexane-1-one-4:6dicarboxylic acid, ethyl ester, A., II, 374. 1:4-Dimethylcyclohexanol, 2-chloro-, A., II, 335.

1:5-Dimethylcyclohexanol, 2-chloro-, A., II, 335. (cis-trans-)2:4-Dimethylcyclohexanol,

a-naphthylurethane, A., II, 160. cis-trans-2:5-Dimethylcyclohexanol, a-naphthylurethane, A., II, 160.

3:4-Dimethylcyclohexanol, a-naphthylurethane, A., II, 160.

cis-cis-3:5-Dimethylcyclohexanol, urethane, A., II, 160. and trans-2:6-Dimethylcyclohexanone,

equilibrium mixture of, A., II, 299. 2:3-Dimethylcyclohexan-1-one-4-carboxylic acid,

and its semicarbazone, A., II, 374.

 $\gamma \epsilon$ -Dimethyl- Δ^{δ} -n-hexen- Δ^{α} -inen- γ -ol, A., II, 358,

 $\alpha\beta$ -Dimethyl-n-hexenoic acid, A., II, 325. ab-Dimethyl-n-hexenonitrile, A., II, 325.

 $\beta\beta$ -Dimethyl-n-hexoic acid, a-cyano-, ethyl ester, A., II, 325.

Dimethylcyclohexyl sulphide, di-1-hydroxy-, A., II, 335.

5:5-Dimethyl-2-β-hydroxy-tert.butyl-1:3-dioxan, 4-hydroxy-, A., II, 181. 5:7-Dimethyl-1-indanone, A., II, 339.

4:7-Dimethyl-5'-iodomethyl- Δ^2 '-dihydrofurano-2':3'-5:6-coumarin, A., II, 270. Dimethyl-Ionchocarpic acid, A., II, 28.

Dimethylmalonic acid, tert.-butyl hydrogen

ester, A., II, 320. aδ-Dimethyl-Δγ-mannosaccharo-βε-lactone,

methyl ester, A., II, 212. $\beta\delta$ -Dimethyl- $a\gamma$ -methyleneglucosaccharic

dimethyl ester, A., II, 321. $\gamma\delta$ -Dimethyl- $\beta\epsilon$ -methylene-D-mannitol,

 $\gamma\delta$ -dihydroxy-, $\gamma\delta$ -diacetyl a ζ -diacetate, A., II, 118. derivative, $\gamma \in -Dimethyl-\beta\delta-methylenesorbitol,$

γε-diacetyl γε-dihydroxy-, derivative, aζ-diacetate, A., II, 286.

2:2-Dimethyl-3-(γ-methyl-Δγ-pentenyl)-chroman, A., II, 22.

2:2'-Dimethylmesonaphthadianthrene, A., II, 300.

1:2-Dimethylnaphthalene, acetylation of, A., II, 223.

3:4-Dimethyl-1-naphthoic acid, and its methyl ester, A., II, 224.

1:5-Dimethyl-2-naphthol, synthesis of, A., II, 124.

3:4-Dimethyl-1-naphthonitrile, A., II, 224. 3:4-Dimethyl-1-naphthyl methyl ketone, and its picrate and semicarbazone, A., II, 223.

dihydro-

- 2:4-Dimethyl-1:8-naphthyridine, and its derivatives, A., II, 236.
- acetyl derivative, A., II, 236. Dimethyinitrosoamine, spectrum of, Raman, A.,
- I, 192.
- β_{η} -Dimethyl- $\Delta^{\beta \zeta}$ -n-octadiene, A., II, 209. $\delta \epsilon$ -Dimethyl- $\Delta \beta \zeta$ -octadiene, A., II, 209.

δε-Dimethyl-n-octane, A., II, 2091 βy-Dimethyl-n-octan-δ-one, and its hydantoin,

2:4-Dimethyl-1:8-naphthyridine.

- A., II, 248. $a\beta$ -Dimethyl-n-octenoic acid, A., II, 325.
- $\alpha\beta$ -Dimethyl- $\Delta\beta$ -n-octenoic acid, α -cyano-, ethyl ester, A., II, 325.
- β_{γ} -Dimethyl- Δ^{ε} -n-octen- δ -one, A., II, 248. aβ-Dimethyl-n-octenonitrile, A., II, 325. Dimethyloctylsulphonium iodide, A., II, 90.
- Dimethylisooxazole, nitro-, A., II, 237. 3:5-Dimethyloxazolidine-2:4-dione, A., II, 382.
- 4:8-Dimethyl-7:12-cyclopenta[a]naphthitadiene-trans-trans-5:6:10:11tetracarboxylic acid, tetramethyl ester. See 1:6-Dimethyl-5:6-trimethylene-2:3:4:6:7:8hexahydronaphthalene-trans-trans-3:4:7:8tetracarboxylic acid, tetramethyl ester.
- 1:3-Dimethylcyclopentane, 1-chloro-, A., II, 357. $\gamma\gamma$ -Dimethyl-n-pentane- $\beta\beta$ -dione, A., II, 213. $\alpha\beta$ -Dimethylpentane- $\alpha\gamma\epsilon$ -tricarboxylic ac
- acid. ethyl ester, A., II, 374.
- $a\beta$ -Dimethylpentane- $a\gamma\epsilon$ -tricarboxylic acid, y-cyano-, ethyl ester, A., II, 374.
- 2:3-Dimethylcyclopentanone-3-carboxylic othyl ester, and semicarbazone of, A., II, 101.
- 2:3-Dimethylcyclopentanone-3:5-dicarboxylic acid, diethyl ester, A., II, 101.
- $\alpha\beta$ -Dimethyl- $\Delta\beta$ -n-pentenoic acid, a-cyanoethyl ester, A., II, 325.
- αβ-Dimethyl-n-pentenonitrile, A., II, 325. β_y -Dimethyl- Δ^a -pentenonitrile, A., II, 250. dl-Dimethyl- β -pentylcarbinol, phenylurethane of,
- A., II, 118. 8:8-Dimethylperinaphthindane-7:9-dione,
- 2:4-dinitrophenylhydrazone, A., II, 299. 2:6-Dimethylphenol, esters, Fries reaction with, A., II, 127.
- 2-6-Dimethylphenol, 4-thiol-, A., II, 271.
- 1-(2':4'-Dimethylphenoxy)-2:4:6-trimethyl-1:2dihydrobenzfuran, A., II, 80.
- 2:4-Dimethylphenylacetic acid, 3:6-dihydroxy-, ethyl ester, A., II, 346.
- NN-Dimethyl-p-phenylenediamine, effect of, on rat liver tumours, A., III, 118.
- a-3:4-Dimethylphenylpropane- $a\beta$ -dione, A., II, 162.
- 3:6-Dimethylphthalic anhydride, reaction of, in Friedel-Crafts and Grignard condensations, A., II, 298.
- 1:1'-Dimethylpiperidine-4-spiro-3'-oxindole, A., II. 202.
- 2:6-dichloro-L aa-Dimethylpropionic acid. phenyl ester, A., II, 128.
- 3:6-Dimethyl-1-isopropylacenaphthene, synthesis of, and its derivatives, A., II, 124.
- 1:6-Dimethyl-3-isopropylnaphthalene, and its derivatives, A., II, 125.
- 2:4-Dimethylpyridinediazidocopper, A., I, 290.
- 4:4'-Dimethyl-1':2'-pyrono-5':6'-8:7-coumarin, A., II, 200.
- Dimethylquinoline ethiodides, A., II, 170.
- 2:3-Dimethylquinoxaline, Diels-Alder synthesis with. A., II, 84.
- 7:8-Dimethyl-5-ribityl-5:10-dihydrophenazine, 1:3-diamino-, and 1:3-dinitro-, A., II, 380. a-p-Dimethylstyrene, determination of,
- presence of p-cymene, p-methylstyrene, and styrene, C., 70. cus-αβ-Dimethylsuccinic acid, ethyl hydrogen ester, and its acid chloride, A., II, 147.
- 1:4-Dimethyl-5:6:7:8-tetrahydro-2-naphthol, A., II, 195.
- 2:4-Dimethyl-5:6:7:8-tetrahydro-1:8naphthyridine, A., II, 236.
- Dimethylthianthren, lethal action of, on scabiesproducing mites, A., III, 556. 1:4-Di-(4'-methyl-2'-thiazolyl)benzene, and its
- picrate, A., II, 382.
- αδ-Di-4-methyl-2-thiazolylbutane, dihydrochloride, A., II, 213.

- Di-4-methyl-2-thiazolylmethane chloride, A., II, 325.
- 2:2'-Di(methylthiol)azobenzene, A., II, 368. 2:2'-Di(methylthiol)azoxybenzene, A., II, 368.
- 5:7-Dimethylthiotocol. See 5:7-Dimethyl-2- $\delta\theta\mu$ -trimethyltridecylthiochroman, 6-hydroxy-.
- 1:6-Dimethyl-5:6-trimethylene-2:3:4:6:7:8hexahydronaphthalene-trans-trans-3:4:7:8tetracarboxylic acid, tetramethyl ester, A., II, 101.
- 5:7-Dimethyl-2- $\delta\theta\mu$ -trimethyltridecylthiochroman, 6-hydroxy-, acetate, A., II, 271.
- Dimethylvinylethinylcarbinol, condensation of, with o- and p-cresols, and its dimerisation to 1:1:3:3-tetramethyl-4-vinylisocoumarone, A.,
- p-[aa-Dimethyl-a-(vinylethinyl)]-o-cresol, its methyl ether, A., II, 302. and
- p-[aa-Dimethyl-a-(vinylethinyl)]-m-cresol,its methyl ether and phenylurethane, A., II,
- 2:4-Dimethyl-3-vinylpyrrole-5-carboxylic ethyl ester, A., II, 377.
- Dimethylvomicidine I and II, A., II, 240. Dimethylvomicine I, and its derivatives, A., II, 240.
- Dimethylvomicine II, derivatives of, A., II,
- NN-Dimethyl-m-5-xylidine, 2-nitro-, A., II, 82. N-Dimethyl-m-xylidines, inhibition of resonance in, A., I, 238.
- Di-(δ-morpholino-n-butyl)amine, and its picrate, A., II, 291.
- s-Di(morpholinomethyl)carbamide, its picrate, A., II, 238.
- Di-(y-morpholino-n-propyl)amine, and its picrate, A., II, 291.
- Dinaphthone dioxide, diamino-, and di- and tri-nitro-, A., II, 305.
- NN'-Di-2-naphthoylhydrazine, NN'-di-5:8-
- dichloro-, A., II, 336. 1:2'-Dinaphthyl, 6:6'-dihydroxy-, A., II, 295. Dinaphthyl selenide, dihydroxy-, and its
- dibenzoate, A., II, 57. NN'-di-5:8-NN'-Di-2-naphthylcarbamide, dichloro-, A., II, 337.
- Dinaphthylene oxide, x-amino-, and its diacetyl
 - derivative, A., II, 304.
 dioxide, acylation and nitration of, A., II,
 - 304. dioxide, .4-amino-, and its derivatives, and
 - "4- and 6-nitro-, A., II, 304. diamino-, di- and tri-nitro-, and their derivatives, A., II, 304.
- Di-p-naphthylthiocarbazone, and its analogues, A., II, 127.
- +)-Di-β-octyl hydrogen phosphite, A., II, 150. 1:3-Dioctylbenztriazolium bromide, A., II, 112.
- 9:10-Di-n-octyl-9:10-dihydrophenanthrene-9:10-diol, A., II, 193.
- (+)-Di-β-octyloxyphosphorus chloride, A., II, 150.
- β -Di-n-octylpropionitrile, A., II, 82.
- Diodone, excretion of, by isolated dog kidney, A., III, 658.
- Diodrast, recovery of, from plasma, effect of filtrate pH on, C., 77.
- by Diolefines, conjugated, double bond displacement, A., II, 209. from allylic chlorides, A., II, 209.
- s-Dioleylthiocarbamide, A., II, 183.
- Dioxan, clarification, dehydration, and purification of, for use in tissue technique, A., III,
 - equilibrium of, with barium or calcium chlorides and water, A., I, 86. with benzene and water, A., I, 154.
 - hydrogen-ion mobility in aqueous mixtures of, A., I, 156.
 - liquid and solid, and adsorbed on ferric oxide gel, vapour pressure of, A., I, 245. I:4-diphosphate, A., II, 233. sulphur dioxide compounds of, A., I, 16.
- 1:3-Dioxan, spectrum of, Raman, A., I, 213. 1:2-Dioxindole, brucine salt, A., II, 378.
- Dipentadecylamine, A., II, 248. Dipentene, dihydrochloride, condensation of, with phenol, A., II, 52.

- Dicyclopentyl sulphide, 2-hydroxy-, A., II, 335.
 - di-2-hydroxy-, A., II, 154. disulphide, di-2-hydroxy-, A., II, 335.
- Dicyclopentylmesitylene, A., II, 123.
- Dicyclopentyltoluene, A., II, 123.
- Dipeptidases, activation of, by cobalt and manganese, A., III, 287.
 - formation of, from aminopolypeptidase, A., III, 66.
- d-Dipeptides, hydrolysis of, C., 42. by carboxypeptidase, A., III, 66.
- aβ-Di-9-phenanthrylethane, A., II, 101.
- Diphendihydrazide, 4-nitro-, A., II, 135.
- Diphenic acid, and 4-nitro-, hydrazides of, and their reactions, A., II, 135.
- Diphenic acid, 6-nitro-, dimethyl ester, A., II, 135.
- Diphenimide, N-amino-4-nitro-, A., II, 135. Diphenols, methyl ethers of, reaction of, with
- trimethylgallazide, A., II, 336. Diphenoxybis-p-diphenylylmethane, A., II, 258.
- Diphenoxyphenyl-p-diphenylylmethane, A., II, Diphenoxypropane, 4:4'-diamino-, bacteriostatic
- action of, in presence of polyamines, A., III, 506.
- Diphenyl, production of, from fluorobenzene and lithium phenyl, A., II, 74.
 Diphenyl, 2-amino-, derivatives of, A., II, 294.
- 2-bromo-5:3'-diamino-, . 5:3'-diacetyl derivative, A., II, 156.
 - 2:5-dibromo-3'-nitro-, A., II, 156.
- 2-bromo-3'-nitro-4'-amino-, and its 4'-acetyl derivative, A., II, 156.
- 2-bromo-3'-nitro-5-amino-, and its 5-acetyl derivative, A., II, 156.
- 2-bromo-5-nitro-4'-amino-, and its 4'-acetyl derivative, A., II, 156.
- 2-bromo-2':5-dinitro-4'-aminoand 4'-acetyl derivative, A., II, 156.
- 2-bromo-4:4'- and 5:3'-dinitro-, and 2-bromo-5:2':4'- and -5:3':4'-trinitro-, A., II, 156.
- chloro-derivatives, precautions in use of, A., III, 430.
- 2:2'-dichloro- 3:3'- and -4:4'-dinitro-, and 2·2'-dichloro- 3:3':5:5'-, -4:4':6:6'-, -4:5:4':5'-tetranitro-, A., II, 155.
- 4-chloro-4'-hydroxy-, chlorination of, and 3:4'-dichloro-4-hydroxy-, and its derivatives, A., II, 12.
- 2-chloro- 5-nitro- and -4:4'- and 4':5-dinitro-, A., II, 155.
- 2-chloro-3:5-dinitro-, reactivity of, A., II, 363.
- 3-mono-, 3:4'- and 3:5-di-, and 3:5:4'-tri-nitro-4-hydroxy-, 4-acetyl derivatives, A., II, 367. halogeno-derivatives, nitration of, A., II,
- 4-hydroxy-, acetate, benzoate, and benzenesulphonate of, iodination of, A., II, 217. iodination of, A., II, 159.
- 3-iodo-4-hydroxy-, and its benzoate, A., II, 159.
- 3:5-diodo-4-hydroxy-, and its benzoate, A., II, 159.
- 2':5'-dinitro-, A., II, 155. Diphenyls, chlorinated, toxicity of, A., III, 363.
- o-substituted, A., II, 328. Diphenyl dibromo and dichloro-selenides, dipole moments of, A., I, 192.
- phosphate, di-o-chloro-, A., II, 159.
- selenoxide, dipole moment of, A., I, 192. pp'-Diphenyl diradicals, of the triphenyl methy type, A., II, 189.
- Diphenyl series, A., II, 12, 217.
- orientation in, A., II, 294. Diphenylacetic acid, 2:6-dichloro-1-phenyl ester, II, 128.
- dissociation constant of, in aqueous acetone and aqueous sucrose, A., I, 281.
- partial hydrogenation of, A., II, 77. Diphenylacetic acid, a-amino-, and a-chloro-, and their derivatives, A., II, 77.
 - 2:4-2':4'-tetranitro-, ethyl ester, use of, as pH indicator, C., 94.
- Di-a-phenylacetone disulphide, A., II, 372. aa-Diphenyl-β-3(β)-acetoxy-Δb:7:9-æstratrien-17-yl- Δ^{α} -propene, A., II, 50.
 - А & С---Н

- aa-Diphenyl-β-3(β)-acetoxy-Δ5:7:9-æstratrien-17-yl-n-propyl alcohol, A., II, 50.
- Di(phenylacetyl) isodurene, A., II, 369. 10:10'-Diphenylacridine, and its diacridylium
- salts, A., II, 60. β_{γ} -Diphenyladipic acid, preparation of, A., II, 78.
- $\beta\gamma$ -Diphenyladipic acid, $\beta\gamma$ -di-o-chloro-, and $\beta\gamma$ -dieyano-, A., II, 78.
- Diphenylalkanes, dihydroxy-, bactericidal action of, A., III, 560.
- aa-Diphenylalkanes, physical data for, A., II, 189.
- aa-Diphenylalkenes, physical data for, A., II,
- NN-Diphenylamides, aliphatic, solubilities of, A., I, 34.
- Diphenylamine, crystals, infra-red vibrational frequency of, A., I, 265. Diphenylamine-2'-aldehyde, 2-nitro-, A., II, 24.
- Diphenylamine-2:4'-dicarboxylic acid, 5-nitro-, A., II, 24.
- Di- $(\beta$ -phenyl- β -3-aminomesitylvinyl)amine, A., IÏ, 298.
- Diphenyl-m-anisyl chloride, A., II, 218.
- 1:4-Diphenyl-5-p-anisyl, A., 11, 224.
- aa-Diphenyl-a-p-anisylethane, aa-di-p-hydroxy-, and its dibenzoate, A., II, 333.
- aβ-Diphenyl-a-anisylethyl alcohol, A., II, 129. 1:5-Diphenyl-4-p-anisylpyrazole, A., II, 224.
- 2:6-Diphenyl-1:5-anthrazoline, and its picrate, A., 11, 278.
- Diphenylazoxysulphone, A., II, 331. o-Diphenylbenzene-2':2"-dicarboxylic acid, A., II, 126.
- 2:3-Diphenylbenzopyrylium perchlorate, nitration of, A., II, 232.
- 4:4"-Di-p-phenylbenzoyl-p-terphenyl, A., II, 189.
- Diphenylbenzthiazolylmethylcarbinol, II.
- Diphenylbis-p-diphenylylmethane,
- di-p-hydroxy-, diacetate, A., II, 258. a δ -Diphenylbutane, β -chloro- β -nitroso-, photolysis of, asymmetric, A., I, 289.
- ay-Diphenyl-n-butane, ay-di-p-hydroxy-, A., II,
- β_{γ} -Diphenyl-n-butane, di-p-hydroxy-, A., II, 129.
- r-βy-Diphenylbutane, 4:4'-dihydroxy-, and its dibenzoate, A., II, 367.
- meso-βγ-Diphenylbutane, 4:4'-dihydroxy-, and its diacetate, A., II, 367.
- γγ-Diphenylbutan-β-ol, di-p-hydroxy-, and its dibenzoate, A., II, 367.
- γγ-Diphenylbutan-β-one, di-p-hydroxy-, A., II, 367.
- Di-a-phenyl-n-bntyl sulphide, A., II, 220. sulphoxide, A., II, 220.
- $\alpha\beta$ -Diphenyl-n-butylamine, β -hydroxy-, and its hydrochloride, A., II, 293.
- $\alpha\beta$ -Diphenyl-n-butyldimethylamine, β -hydroxy-, hydrochloride, A., II, 293.
- aa-Diphenyl- Δ^{α} -n-butylene, A., II, 189.
- Di-a-phenyl-n-butylsulphone, A., II, 220.
- 2:2-Diphenyl-4-lert.-butyltetrahydrofuran, II, 289.
- β -($\beta\beta$ -Diphenylbutyramido)ethanesulphonic acid, β-(ay-dihydroxy)-, A., II, 190.
- dl-ββ-Diphenyl-y-butyrolactone, α-hydroxy-, A., II, 190.
- 1:1-Diphenyl-4-camphorylthiosemicarbazide, A., 11, 232,
- 2:4-Diphenylchroman-2-ol, A., II, 142.
- 3:4-Diphenylcinnoline, A., II, 25.
- 2:2'-Diphenyl-4:4'-di-(p-acetamidophenyl)azapyrromethine, A., II, 81.
- 2:2'-Diphenyl-4:4'-di-p-anisylazapyrromethine, A., II, 81.
- 4:4'-Diphenyl-2:2'-di-p-anisylazapyrromethine, A., II, 81.
- $\alpha\delta$ -Diphenyl- $\beta\gamma$ -dianisylbutan- β -ol, A., II, 129. 3:6-Diphenyl-4:5-di-p-bromophenyl-3:6-endo-ahydroxybenzylidene-44-tetrahydrophthalic anhydride, A., II, 163.
- 2:2'-Diphenyl-4:4'-di-(p-dimethylaminophenyl)azapyrromethine, and its dimethiodide, A., II,

- αμ-Diphenyl-οι-diethyl-Δαγεηιλ-dodecahexaene, A., II. 10.
- aa-Diphenyl- $\beta\beta$ -diethylethylene, aa-di-phydroxy-, A., II, 191.
- NN-Diphenyl-N'N'-diethylethylenediamine, A., II, 202.
- 5:5-Diphenyl-5:10-dihydro-3:4-benzacridine, A., II. 276.
- 2:2'-Diphenyl-4:4'-di-(m-hydroxyphenyl)aza-pyrromethine, A., II, 81.
- 1:5-Diphenyl-4-3':4'-dimethoxyphenylpyrazole,
- A., ÎI, 224. 2:3-Diphenyl-5:6-dimethoxyquinoxaline, A., II,
- 131. 2:3-Diphenyl-6:7-dimethoxyquinoxaline, A., II, 131.
- aμ-Diphenyl-δι-dimethyl-Δαγεηιλ-dodecahexaene, A., II, 10.
- 2:2'-Diphenyl-4:4'-di-(3:4-methylenedioxyphenyl)azapyrromethine, A., II, 81.
- $a \in -Diphenyl-\zeta\zeta-dimethyl-\Delta^a-hepten-\gamma-one$, A., II, 17.
- 7:9-Diphenyl-8:8-dimethylperinaphthindane, 7:9-dihydroxy-, A., II, 299.
- 1:7-Diphenyl-8:8-dimethylperinaphthindan-9one, 7-chloro-, and 7-hydroxy-, and its methyl ether, A., II, 299.
- Diphenyldimethylpolyenes, and their derivatives, preparation of, A., II, 10.
- 2:4-Diphenyl-3:5-dimethylthiophen, hydroxy-, and its diacetate, A., II, 306.
- 2:2'-Diphenyl-4:4'-di-(m-nitrophenyl)azapyrromethine, A., II, 81.
- $a\delta$ -Diphenyl- $a\delta$ -di-p-phenoxyphenyl- $\Delta\beta$ butinene-αδ-diol, A., II, 124.
- 2:2-'Diphenyldiphenyl, 4:6:4':6'-tetranitro-, A., II, 363.
- 4:4'-Diphenyl-2:2'-dithiazolyl, A., II, 280. aa-Diphenyl-4a-n-dodecene, A., II, 189.
- Diphenylene, structure of, A., I, 5.
- 4:4'-Diphenylenebisdiphenylmethyl, peroxides of, A., II, 41.
- 5:5-o-Diphenylene-1:3-N-dimethylhydantoin, A., II. 348.
- 5:5-Diphenylenehydantoin, 5-amino-, A., II
- 348. 5:5-o-Diphenylene-3-N-methylhydantom, A., II,
- aβ-Diphenylethane, a-chloro-β-nitro-, A., II
- 357. $a\beta$ -Diphenylethanol, β -bromo-, and its p-nitro-
- benzoate, A., II, 335.
- cis-aβ-Diphenylethanol, β-chloro-, and its p-nitrobenzoate, A., II, 335.
 NN'-Diphenyl-N-ethylamidine, chloro-, A., II,
- 191. and derivatives, Diphenylethylamine, its
- morphine-like properties of, A., III, 683. aβ-Diphenylethylamine, morphine-like proper-
- ties of, A., II, 293. aß-Diphenyl-a-ethyl-n-butyl alcohol, A., II, 44.
- α -($\alpha'\beta'$ -Diphenylethyl)succinic acid, and its anhydride, A., II, 195.
- 180-a'β'-Diphenylethylsuccinic acid, and its dimethyl ester, A., II, 195.
- Diphenyl-m-fluorophenylcarbinol, A., II, 329. Diphenyl-m-fluorophenylmethyl chloride, A., II,
- 329.Diphenyld:fluorosilane, A., II, 383.
- αγ-Diphenyl-n-heptane, αγ-di-p-hydroxy-, II, 13.
- $\beta\beta$ -Diphenyl-n-heptane, $\beta\beta$ -dits dibenzoate, A., II, 333. $\beta\beta$ -di-p-hydroxy-, and
- aa-Diphenyl-n-hexadecan-a-ol, A., II, 189. $\alpha\alpha$ -Diphenyl- Δ^{α} -n-hexadecene, A., II, 189.
- $\gamma\delta$ -Diphenyl- $\Delta\beta\delta$ -hexadiene, 2:2'-dihydroxy-, and its dimethyl ether, A., II, 129. 3:3'-dthydroxy-, A., II, 129.
- αγ-Diphenyl-n-hexane, αγ-di-p-hydroxy-, A., II, 13.
- di-p-nitrobenzoate, A., II, 13.
- γδ-Diphenyl-n-hexane, γδ-di-p-amino-, y8-di-3:4-dihydroxy-, and their derivatives, A., II, 13.
- dl-γδ-Diphenylhexane, γδ-di-p-hydroxy-, nitrogenous derivatives of, A., II, 217.
- :3-Diphenylcyclohexane, 1:3-di-p-hydroxy-, and its diacetate, A., II, 257.

- $\gamma\delta$ -Diphenylhexane- $\gamma\delta$ -diol, di-p-hydroxy-, dibenzoate and di-p-toluenesulphonate, A., II, 75.
- γδ-di-p-hydroxy-, and its derivatives, A., II, 75.
- 2:2'-dihydroxy-, A., II, 129.
- 3:3'-dihydroxy-, and its diacetate, A., II, 129. γγ-Diphenylkexan-δ-one, γγ-di-p-hydroxy-, and its dibenzoyl derivative, A., II, 75.
- aζ-Diphenylhexatriene, A., II, 363.
- NN'-Diphenyl-l-n-hexylformazan, A., II, 205. 2:3-Diphenyl-5-n-hexyltetrazolium chloride, A., II, 205.
- Diphenylhydantoin, protection by, anoxia, A., III, 329. against
- 5:5-Diphenylhydantoin. See Dilantin.
- 5:5-Diphenylhydantoin, 1:3-dichloro., A., II, 365.
- αδ-Di-[2-(5-phenylhydantoinyl)]butane, A., II, 350.
- αζ-Di-[5-(5-phenylhydantoinyl)]hexane, A., II, 350.
- aa-Diphenyl- β -11(a)-hydroxy-3(a)-acetoxyætiocholanyl- Δ^{α} -propene, A., II, 342.
- aa-Diphenyl- β -11(a)-hydroxy-3(β)-acetoxyætiocholanyl- Δ^a -propene, A., II, 342.
- aa-Diphenyl- β -3:12-dihydroxybisnorcholanylethylene, and its 3-hydrogen succinate, A., II,
- Diphenyl-4'-hydroxy-p-diphenylylcarbinol, its acetate and methyl ether, A., II, 258.
- aa-Diphenyl-\$-3-hydroxy-12-ketobisnor-
- cholanylethylene, and its 3-acetato, A., II, 51. Diphenyl-3-hydroxy-12-ketonorcholanylcarbinol, A., II, 51.
- 1:1-Diphenylindane, and its derivatives, A., II,
- 1:1-Diphenylindane, 3-bromo-, A., II, 193.
- 1:1-Diphenyl-3-indanylacetic acid, and derivatives, A., II, 193.
- 1:1-Diphenyl-3-indanylacetic acid, 3-hydroxy-, cthyl ester, A., II, 193.
- 1:1-Diphenyl-3-indanylacetonitrile, A., II, 193. β -1:1-Diphenyl-3-indanylethylamine, and its
- hydrochloride, A., II, 193. 1:1-Diphenyl-3-indanylmalonic acid, and its silver salt, and di-p-nitrobenzyl and ethyl
- esters, A., II, 193. 1:1-Diphenyl-3-indenylacetic acid, and its derivatives, A., II, 193.
- 1:8-Diphenylmenthane, and 1:8-ds-p-hydroxy-,
- and its esters, A., II, 52. Di- β -phenyl- β -mesitylvinyl ether, A., II, 360.
- Diphenylmethanes, 4:4'-dihydroxy-, cestrogenic activity of, in relation to structure, A., II,
- p-Diphenyl-4'-methoxy-4-diphenylyl ketone, A., II, 258.
- $p ext{-Diphenyl-6-methoxy-3-diphenylyl}$ ketone, A., II, 258.
- ββ-Diphenyl-γ-methylbutane, ββ-di-p-hydroxy-, and its dibenzoate, A., II, 333. 5:5-Diphenyl-3-methyl-5:10-dihydroacridine, A.,
- II. 276. 1:5-Diphenyl-4-3':4'-methylenedioxyphenyl-
- pyrazole, A., II, 224. 5:5-Diphenyl-3-N-methylhydantom, A., II, 348.
- 1:3-Diphenyl-2-methylhydrindene, A., II, 299. 2:2-Diphenyl-4-methyl-a-naphtho-43-chromen,
- A., II, 23. ay-di-p- $\alpha \gamma$ -Diphenyl- δ -methyl-n-pentane, hydroxy-, A., II, 13.
- 2:3-Diphenyl-5-methyltetrazolium chloride, A., II, 205.
- $Di_{-}(\beta-phenyl-\beta-3-nitromesitylvinyl)amine,$
- II, 298. aβ-Diphenyloctadecane, aβ-di-p-hydroxy-, and its dimethyl ether, A., II, 129.
- aa-Diphenyl- Δ^a -n-octadecene, A., II, 189. ay-Diphenyl-n-octane, ay-di-p-hydroxy-, A., II,
- 13 ββ-Diphenyl-n-octane, ββ-di-p-hydroxy-, and its dibenzoate, A., II, 333.
- $\delta\epsilon$ -Diphenyloctanes, di-p-hydroxy-, A., II, 129. aa-Diphenyl-\(\alpha = n\)-octene, A., II. 189. ay-Diphenyl-n-pentane, ay-di-p-hydroxy-, A.,
- II. 13. $a\epsilon$ -Diphenyl-n-pentane- $a\epsilon$ -dione, A., II, 225.

2:4-Diphenylcyclopentane-1:3-dione, 5-hydroxy-, and its di-acetate, A., II, 227.

trans-cis-2:3-Diphenylcyclopentanol, A., II, 226. trans-trans-2:3-Diphenylcyclopentanol, A., II, 226.

cis- and trans-2:3-Diphenylcyclopentanones, and

their semicarbazones, A., II, 226. 1:2-Diphenyl-41-cyclopentene, A., II, 225.

3:4-Diphenyl-△4-cyclopentene-1:3-dione, A., II, 227

catalytic 2:3-Diphenyl-\(\alpha^2\)-cyclopentenone, hydrogenation of, A., II, 225.

4-hydroxy-, 3:4-Diphenyl-△2-cyclopentenone, 2:4-dinitrophenylhydrazone, A., II, 225.

3:4-Diphenyl-43-cyclopentenone, semicarbazone, A., II, 225.

9:10-Diphenylphenanthrene, 9:10-di-p-hydroxy-, and its derivatives, A., II, 130.

Diphenylphosphonic acid, dithallium salt, A., II,

Diphenylphosphorylcholine chloride, A., II. 323. Diphenylphthalide, 2'-hydroxy-, and its derivatives, A., II, 15.

3:4-Diphenylpiperidine, a- and β -forms of, and their derivatives, A., II, 143.

4:5-Diphenyl-2-piperidone, α - and β -forms of, II, 143.

aa-Diphenylpropaldehyde, β -hydroxy-, A., II, 190.

atives of, A., II, 12. ay-Diphenylpropane,

 $\beta\beta$ -Diphenylpropane, β -o-chloro-, and β -o-cyano-, A., II, 10,

ββ-Diphenylpropionic acid, tert.-butyl ester, A., II. 220.

 $\beta\beta$ -Diphenylpropionic acid, β -hydroxy-, aminoalkyl and dialkylaminoalkyl esters, salts of, A., II, 47.

γγ-Diphenyl-n-propyldiethylamine, A., II, 202. ah-Diphenyl-n-propyldimethylamine,

β-hydroxy-, hydrochloride, A., II, 293.

2:4-Diphenylpyrrole, and 3-amino-, A., II, 80. 2:4-Diphenylpyrrole, 5-amino-, acyl derivatives,

A., II, 200. and its acetyl derivative, A., II, 81. 5-nitroso-, and its hydrochloride and picrate,

A., II, 81. 2:4-Diphenylpyrrole-5-aldehyde, and its deriv-

atives, A., II, 81.

Diphenyl-4-sulphonamide, 2'-amino-, 2'-acetyl derivative, A., II, 96.

and its derivatives, A., II, 95. 2'-nitro-, A., II, 95.

Diphenyl-4'-sulphonamide, 2- and 4-amino-, A., II. 294.

Diphenylsulphonamides, derivatives of, A., II,

2'-Diphenyl-4"-sulphonamidodiphenyl-4-sulphonamide, 2-2"'-amino-, an sulphonamide, 2-2"-amino-, and its 2-2"-acetyl derivative, and 2-2"-nitro-, A., II, 96.

Diphenyl-4-snlphonanilide, 2'-amino-, acetyl derivative, and 2-nitro-, A., II, 96. Diphenyl-4-sulphonbenzylamide, 2'-amino-, and

its acetyl derivative, and 2-nitro-, A., II, 96.

Diphenylsulphone, 4:4'-diamino-, effect of, on tuberculosis, A., III, 359, 564.

unsymmetrical diacyl derivatives of, A., II, 131.

Diphenyl-4-sulphonic acid, 2'-amino-, 2'-nitro-, and their derivatives, A., II, 96.

Diphenyl-4-sulphon-o- and -p-xenylamides, and their acetyl derivatives, A., II, 96.

2'-amino-, chloride, Diphenyl-4-sulphonyl 2'-acetyl derivative, A., II, 95. 2'-nitro-, A., II, 96.

 N^4 -Diphenyl-4'-sulphonylsulphanilamide, N^4 -2"-amino-, and its N^4 -2"-acetyl derivative, and N^4 -2"-nitro-, A., II, 96.

Diphenyltetracarboxylic acid, and its derivatives, A., II, 206.

1:4-Di-(4'-phenyl-2'-thiazolyl)benzene, A., II, 382.

αδ-Di-4-phenyl-2-thiazolylbutane, and hydrobromide, A., II, 280

Di-4-phenyl-2-thiazolylmethane, A., II, 325

ζζ-Diphenyl-n-undecane, di-p-hydroxy-, and its dibenzoate, A., II, 333.

NN'-Diphenyl-C-n-undecylformazan, A., II, 205. 2:3-Diphenyl-5-n-undecyltetrazolium chloride, A., II, 205.

'-Diphenylisovaleric acid, A., II, 299. Diphenyl-9-xanthylcarbinol, A., II, 142.

Diphenylyl-2-acetic acid, β-diethylaminoethyl ester, hydrochloride, A., II, 16.

o-Diphenylylcarbimide, A., II, 293.

1:2'-Diphenylyl-3:4-dihydronaphthalene, and its epoxide, A., II, 10.

4-2'-Diphenylyl-1:2-dimethyl-1:2-dihydronaphthalene, A., II, 364.

4-Diphenylylethyl carbonate, A., II, 217. δ -2-Diphenylyl-n-heptan- δ -ol, A., II, 42. 4-2'-Diphenylyl-1-methyl-1:2-dihydro-

naphthalene, A., II, 363. 4:2'-Diphenylyl-2-methyl-1:2-dihydronaphthalene, A., II, 363.

Diphosphopyridine nucleotide, determination of, micro-manometrically, C., 192.

stability of, in rat tissue, A., III, 39 $\beta\gamma$ -Diphthalimidobutane-a δ -diol, A., II, 142. βγ-Diphthalimido-aδ-diacetoxybutane, A., II, 143.

αζ-Diphthalimidodimethylenemannitol, A., II, 184.

δ-Di-γ-phthalimidopropylamino-6-methoxyquinoline, A., II, 56.

5:6:5':6'-Diphthaloyldinaphthylene dioxide, A., II, 304.

Diphthaloylperylene- B_1 and $-B_2$, A., II, 104. Diphtheria, antiserum for, action of pepsin on, A., III, 507.

antitoxin, action of urea on, A., III, 846. in pregnancy, A., III, 846.

of human serum, A., III, 74. Bantu, A., III, 74.

conjunctival and cutaneous, A., III, 74. diagnosis of, laboratory, A., III, 371.

faucial and labial, A., III, 74. immunisation against, A., III, 299.

immunity to, A., III, 697. duration of, A., III, 299.

infant-protection against, after immunisation of pregnant mother, A., III, 148.

infection with, effect of metals on, A., III, 371. malignant, etiology of, A., III, 74. Middle East, A., III, 74.

on Witwatersrand, A., III, 148.

toxin, concentration and purification of, A., III, 697.

influence of, on glycogen phosphorylation and adenosine triphosphate hydrolysis, A., III, 275.

production of, high potency, A., III, 697. serum-albumin as stabiliser for, A., III, 567.

toxoid, alum-precipitated, A., III, 372. for immunisation, A., III, 223.

immunisation with, combined with tetanus toxoids and *Hæmophilus pertussis* vaccine, A., III, 698. intradermal, A., III, 372.

low-alum, antitoxin response to, A., III, 372. Dipicolinatohydroxo-iron, di-4-chloro-, A., II, 111.

Di- $(\delta$ -piperidino-n-butyl)amine, and its picrate, A., II, 291.

aβ-Dipiperidinopropionic acid, ethyl ester, A., II,

 $Di-(\gamma-piperidino-n-propyl)$ amine, and its picrate, A., II, 291.

N'N'-Di- $(\gamma$ -piperidino-n-propyl)sulphanilamide, A., II, 292.

Diplobdella brasiliensis, sensitivity of, acetylcholine, A., III, 681. Diplococcin, A., III, 615.

cultivation of, in Diplococcus pneumoniæ, market eggs, A., III, 698.

Diplodia macrospora, carbohydrate requirements of, A., III, 290.

Diplopia, monocular, A., III, 802. Dipolar solids. See under Solids.

Dipole moments of acetylenic ethers, A., I, 193. Dipropionylphloroglucinol, A., II, 49.

4:6-Dipropionylpyrogallol, A., II, 49. Di-n-propyl ether, di-y-amino-, A., II, 291.

Dissopropyl ether, oxidation of, A., II, 359.

2:4-Dissopropylacetophenone, and its semicarbazone, A., II, 136.

 ω -Dipropylaminoacetanilide, and o-, m-, and p-nitro-, and their hydrochlorides, A., II, 127. $10-\beta$ -Di-n-propylaminoethylphenothiazine, II, 353.

10-y-Di-n-propylamino-n-propylphenothiazine, Á., II, 353.

-γ-Di-n-propylamino-n-propylsulphanilamide, A., II, 291.

2:4-Dissopropylbenzamide, A., II, 133. 2:5-Diisopropylbenzamide, A., II, 133.

m-Diisopropylbenzene, and 4-amino-, 4:6-diamino., 2- and 4-nitro-, 4:6-dinitro-, and 6-nitro-4-amino-, and their derivatives, A., II, 156.

2-bromo-, A., II, 133.

p-Dissopropylhenzene, 2-amino-, 2:6-diamino-, 2-nitro-, and 6-nitro-2-amino-, and their derivatives, A., II, 157. 2-bromo-, A., II, 133.

Dissopropylbenzenesulphonamides, A., II, 155. 1:3-Diisopropylbenzene-4-sulphonamide,

6-nitro-, A., II, 155. Dissopropylbenzenesulphonanilides, A., II, 155.

1:3-Dissopropylbenzene-4-sulphonyl chloride, A., II, 155. 1:3-Diisopropylbenzene-4-sulphonyl chloride.

6-nitro-, A., II, 155. p-Disopropylbenzene-2-sulphonyl chloride, A., II, 155.

2:4-Dissopropylbenzoic acid, A., II, 133.

2:5-Diisopropylbenzoic acid, A., II, 133.

2:4-Diisopropylbenzonitrile, A., II, 133.

2:4-Dissopropylbenzonitrile, 5-nitro-, A., II, 134. 2:5-Diisopropylbenzonitrile, A., II, 133.

 $\alpha \gamma$ -Di-p-isopropylbenzylaminopropan- β -ol, A., II, 366.

NN'-Di-p-n-propylbenzylethylenediamine, its dihydrochloride, A., II, 366. NN'-Di-4-isopropylbenzylethylenediamine,

2-nitro-, dihydrochloride, A., II, 366.

NN'-Di-p-isopropylbenzylhexamethylenediamine, A., II, 366.

Di-n-propylcarbodi-imide, A., II, 185. Diisopropylcarbodi-imide, A., II, 185.

5:5-Di-n-propyl-2:4-dithiobarbituric acid, A., II,

NN-Di-n-propyldithiocarbamic acid, copper salt, crystal structure of, A., I, 146.

9:9-Di-n-propylfluorene, A., II, 42. cis-cis-2:6-Di-n-propylcyclohexanol,

α-naphthylurethane, A., II, 160. 1:2-4:5-Diisopropylidene-d-fructopyranose 3-methanesulphonate, A., II, 92.

Diisopropylidenegalactose, p-benzeneazobenzoate, A., II, 6.

3:4:5:6-Disopropylideneglucosazone, A., II, 34. Disopropylideneglucose, p-benzeneazobenzoate, A., II, 6.

Diisopropylidenemannose, p-benzeneazobenzoate, A., II, 6.

2:3-4:6-Diisopropylidene-1-sorbofuranose 1-methanesulphonate, A., II, 92.

1:3-Dissopropylidene-4-sulphonanilide, 6-nitro-,

A., II, 155. $\beta \gamma \delta \epsilon$ -Dissopropylidene-DL-xylitol,

derivatives, A., II, 178. Dissopropylmalonic acid, ethyl esters, A., II, 211. 2:4-Diisopropylphenylglyoxylic acid, A., II, 136.

2:5-Di-n-propylphenyl methyl ketone. 2:4-dinitrophenylhydrazone, A., II, 223.

β-Di-n- and -iso-propylpropionitriles, A., II, 82. y-Di-n- and -iso-propyl-n-propylamines,

dipicrates, A., II, 82. 9-y-Di-nand -iso-propylpropylamino-2-6-chloro-,

methoxyacridines. dihydrochlorides, A., II, 83.

NN'-Diisopropylthiocarbamide, A., II, 185. 5:5-Di-n-propyl-2:4:6-trithiobarbituric acid, A., II, 203.

Diisopropyl-m-4-xylenol, A., II, 367.

picrate Di-(a-3-pyridylethyl)amine, and platinichloride, A., II, 377.

Di-3-pyridylmethylamine, and its picrate and platinichloride, A., II, 377. Di-(5-pyrimidylmethyl)amine, di-(2:4-diamino-),

tetrahydrochloride, A., II, 147.

Dipyrrolopyridones, formation of, in porphyrin synthesis, A., II; 350. Dipyrrylmethanes, reaction of, leading to new, class of heterocyclic compounds, A., II, 350. Dipyrrylmethane dyes, relation between triphenylmethane dyes and, A., II, 276. Dipyrrylmethenes, structure of, effect on, of substituents, A., II, 276. Disaligeninodihydromyrcene, A., II, 22. Discrimination, biophysics of, A., III, 23. Diseases, adaptation, pathogenesis of, role of hypophysis in, A., III, 653. allergic, lymphocytes and symptoms in, A., III, 633. respiratory, tests of, with mould fungi extracts, A., III, 305. amyloid, treatment of, with liver preparation in man, A., III, 36. anorectal, anal glands in, A., III, 234. bleeding. See Disease, hemorrhagic. blood. See Anemia, Blood diseases, Hemophilia, Leukæmia, etc. bone. See Bone disease. cardiac. See Angina pectoris, Heart diseases, etc. climate and, A., III, 817. cocliac, pancreatic enzyme activity and, A., III, 192. serum-lipins in, A., III, 636. deficiency, mineral and trace element metabolism in animals in relation to, A., III, 420. falling. See Falling disease. gall-bladder. See under Gall-bladder. gastroduodenal, ulcerative, treatment of, with sodium alkyl sulphate, A., III, 656. gastrointestinal. See under Gastrointestinal tract. hæmolytic, of newborn. See Erythroblastosis fœtalis. hæmorrhagie, hereditary, blood-vessel defect in swine with, A., III, 526. intrauterine onset of, in newborn, A., III, management and mechanics of, in children, А., ПІ, 717. of newborn, prevention of, by vitamin-K, A., III, 791. sweet clover, A., III, 324, 635. heart. See Angina pectoris, Heart diseases, etc. hyperkinetic, A., III, 247. infectious, A., III, 72 chemistry of, A., III, 744. control of, A., III, 70. egg-culture technique in, A., III, 148. insects in relation to, in Australians, A., III, 660. liver-glycogen. See Gierke's disease. malignant. See Cancer. mental, intestinal parasites of, A., III, 222. See also Brain diseases, Schizophrenia, etc. neoplastic, blood-pyruvic acid level in, A., III, 672. osscous. See Bone disease. pathogenesis of, nutritional deficiency in, A., III, 264. pericardial. See under Pericardium. photosensitivity, in New Zealand, A., III, 836. pulmonary. See Lung diseases, Pneumonia, reaction curves of doctor and patient in, instrument for recording, A., III, 403. respiratory, air sterilisation in relation to, A., III, 695. oiled floors to control, A., III, 695. rheumatic, in childhood, A., III, 437. See also Arthritis, Rheumatism, etc. rickettsial, immunology of, A., III, 303. sickle-cell. See Anæmia, sickle-cell. skin. See Dermatitis, Skin diseases, etc. tissue-lead concentrations in, A., III, 834. traumatic, alleged, A., III, 215. treatment of, diet in, A., III, 264. tropical, antiparasitic agents for, A., III, 836. prevention and treatment of, drugs for, A., TII, 278. spread of, slave-trade in relation to, A., III,

acid.

Diseases, vascular, A., III, 243. after pregnancy toxemia, A., III, 16. peripheral, treatment of, alcohol lumbar paravertebral block in, A., III, 719. β -Dithiocarbamic with sex hormones, A., III, 328. ester, C., 167. test for vascular tone applied to study of, in man, A., III, 640. venereal. See Gonorrhœa, Syphilis, etc. virus, diagnosis of, laboratory, A., III, 302. in guinea-pigs injected with ticks, A., III, 849. infection by, air-borne, A., 111, 79. chemotherapy of, A., III, 607. A., II, 278. transmission of, by water, A., III, 302. Disinfectants, bacteriostatic activity of, C., 138. testing of, thioglycollate media for, A., III, 56. wound, bactericidal action of, testing of, A., III, 560. Disinfection, dynamics of, A., III, 505. Disjoining action, A., I, 36.

Disperse systems. See under Systems. Dissociation of diatomic molecules, energy of, and spectra, A., I, 115. Dissociation constants, determination of, by electrometric titration, A., I, 202. 329. of carboxylic acids, effect of substitution on, A., I, 224. 234. of inorganic oxygen acids, relation between, A., I, 16. of weak acids, A., I, 224. of weak electrolytes, effect of temperature on, Dissonance, relations between, and context, A., III, 338. one, A., II, 199. Distillates, electrical indicator for collecting constant volumes of, C., 145. Distillation, double, in same flask, C., 146. fractional, laboratory, low-pressure ar -temperature, pressure control in, C., 101. molecular, A., II, 1. bibliography of, C., 101. Distillation apparatus, column, laboratory, with Fenske packing, effect of diameter on effectiveness and throughput of, C., 101. flasks, C., 206. laboratory glass, safety cap for, C., 206. receiver, C., 51. steam, C., 51. as, A., III, 759. vacuum, C., 206. bioassay of, C., 86. for high-boiling liquids, C., 146. ground-glass joint for, C., 145. with exclusion of air, C., 51. Distribution constants, detection of organic III, 412. compounds by means of, C., 36. Di-p-sulphamylbenzeneazoresorcinol, A., II, 368. Disulphanilamide, 3:5:3'-tri- and 3:5:3':5'-tetra-iodo-, and their salts, A., II, 11. 600. NN'Di(sulphanilamido)-NN'-di(sulphanilamidoethyl)ethylenediamine, and its tetra-acetyl derivative, A., II, 75. β_{γ} -Di(sulphanilamido) isopropyl alcohol, and its NN-diacetyl derivative, A., II, 75. 2-Disulphanilamidopyridine, 2-3':5'-diiodo-, A., A., II, 322. II. 11. NN'-Disulphanilyltetramethylenediamine, A., II, 274.3:6-Disulpho- β -naphthaleneazo-N-phenyl- α naphthylamine, as indicator in chromatography, C., 118. Diterpenes, A., II, 124. Di-1:2:3:4-tetrahydro-2-naphthyl sulphide, di-3-hydroxy-, A., II, 154. NN'-Di(tetrahydro- β -naphthylmethyl) ethylenediamine, dihydrochloride, A., II, 366. $a\beta$ -Ditetrahydroisoquinolino- β -phenylpropiophenone, A., II, 171. aa-Di-pp'-tetramethyld: aminodiphenyl- β -2quinolylethane, derivatives of, A., II, 275. aa-Di-pp'-tetramethyldiamınodiphenyl- β -2quinolylethylene, A., II, 274. aa-Di-pp'-tetramethyld:aminodiphenyl-β-1:2:3:4-tetrahydro-2-quinolylethane, and its derivatives, A., II, 275. 82. aaa'a'-Ditetramethyleneadipanilic acid, and its II, 112. methyl ester, A., II, 194. Sec aaa'a'-Ditetramethyleneadipic acid. $Ethylene-\alpha\beta\text{-}biscyclopentane-1:I'-dicarboxylic}$

2:2'-Dithiazolyl, derivatives of, A., II, 280. Dithioamides, reaction of, with tribromotriacetylbenzene, A., II, 382. acid, ε-diethylaminoamyl αω-Dithiols, A., II, 2. Dithionates. See under Sulphur. Dithizone, as a microchemical reagent, C., 109. Dithymoquinone, A., II, 373. Dithymoxysilan, diehloro-, A., II, 191. 2:5-Di-p-toluenesulphonamidoterephthalaldehyde, and its dianiI and dipiperidine salt, 2:5-Di-p-toluenesulphonamidoterephthalylidenediacetoacetic acid, diethyl ester, A., II, 278. αζ-Di-p-toluenesulphonyldimethylenesorbitol, A., II, 119. NN'-Di-p-toluenesulphonyl-1:4-naphthylenediamine, A., II, 74. Di-p-tolyl bromo- and chloro-tellurides, dipole moments of, A., I, 192. telluroxide, dipole moment of, A., I, 192. Di-p-tolylazoxysulphone, A., II, 331. Di-m-tolyl-p-tert.-butylphenylcarbinol, A., II, 2:4-Di-m-tolyl-6-methylpyrylium iodide, A., II, 2:4-Di-p-tolyl-6-methylpyrylium iodide, A., II, Di-o-tolylquinoxaline, A., II, 310. s-Di-p-tolylselenocarbamide, A., II, 216. Ditridecylamine, A., II, 248. αε-Di-2:4:6-trimethylphenyl-Δαδ-pentadien-γ- α ζ-Ditriphenylmethyl- β γ- $\delta\epsilon$ -dimethylenemannitol, A., II, 119. αζ-Ditriphenylmethyldimethylenesorbitol, A., II, Dicyclo-(0:4:5)-undecane, A., II, 253. Dicyclo-(0:4:5)-undecan-1-ol, and its dinitrobenzoate, A., II, 253. Dicyclo-[0:4:5]-undecene, A., II, 253. Diuresis, tea and water, chloride excretion during, effect of exercise on, in man, A., III, water, endocrine factors in, A., III, 535. Diuretics, amides, amines, and their derivatives mercurial, toxicity of, A., III, 496. treatment with, combined, A., III, 834. Diverticulum, Meckel's, containing calculi, A., perforated leiomyoma of, A., III, 600. of colon, in rats fed high-fat diet, A., III, Divinyl ether, anæsthetic activity of. See under Anæsthetics. evaluation of, A., III, 495. oil-water distribution ratio of, A., I, 246. stability of, A., III, 429. Divinyl ketones, conversion of, into acetylenes, DivinyImethane, preparation of, A., II, 317. Dixanthyl, 9-hydroxy-, A., II, 142. 1:3-Dixanthylbenziminazolone, A., II, 239. 1:3-Dixanthylbenziminazolthione, A., II, 239. Docosylamine, and its acetyl derivative and salts, A., II, 122. Dodecane, electrophoresis of, A., I, 15. n-Dodecane, αμ-dithiol-, A., II, 2. Dodecane- $\beta\gamma$ -dione, A., II, 181. n-Dodecane-εη-dione, A., II, 322. 4'-n-Dodecoamidodiphenylsulphone, 4-amino-. 4-acctyl derivative, A., II, 131. n-Dodecoic acid, a-glyceryl ester, and its a'-stearate, A., II, 180. Dodecyl sulphide, A., II, 90. Dodecylacetoacetic acid, and its ethyl ester, and their ethylene ketals, A., II, 34. n-Dodecylamine, hydrochloride, A., II, 34. 5-Dodecylaminoacridine hydrochloride, A., II, 1-n-Dodecylbenztriazole, and its derivatives, A., 2-Dodccyl-p-cymene, A., II, 41. 1-Dodecyldecahydronaphthalene, A., II, 41. n-Dodecylcyclohexane, A., II, 40.

2-Dodecyl-p-menthane, A., II, 41.

3-n-Dodecyloxyquinoline, and its methylmethosulphate, A., II, 111.

6-n-Dodecyloxyquinoline, and its salts, A., II, 111. 8-n-Dodecyloxyquinoline, and its salts, A., II,

111. 1-n-Dodecylcyclopentanol, 3:5-dinitrobenzoate,

A., II, 219. 1-n-Dodecylpiperazine, dihydrochloride, A., II,

a-n-Dodecylthioi-n-undecoic acid, and its barium salt, A., Il, 151.

1-n-Dodecyl-1:2:4-triazole, and its ethobromide, A., II, 112.

Doebner reaction, A., II, 235.

Dog, brain of. See under Brain.

Dogfish, spiny. See Squalus acanthias.

Dogger, Yorkshire, geology of, A., I, 135.

Dolantin. See Demerol.

Dolichocolon, and Hirschsprung's disease, A., III, 657.

Dolomite, determination in, of magnesium oxide, C., 155.

dissociation of, effect of salt admixtures on, A., I, 112.

distinction of, from calcite, staining tests for, A., I, 257.

Doppler effect, in refractive media, A., I, 98. Dough, fermentation of lactose and maltose in,

Drops, liquid, vibrations of, applied to nuclear physics, A., I, 140.

Dropsy, epidemic, epidemiology of, A., III, 282, 835.

hæmatology in, A., III, 162.

Drosophila, alleles in, primary attributes of, A., III, 628.

isoalleles in, wild-type, A., III, 628 asphyxiation and narcosis in, A., III, 261. development of, hormones in, A., III, 448.

eggs, suspension of pole cell formation in, by hydrostatic pressure, A., III, 236.

eye pigments of, A., III, 460. larvæ, mutation rate in, effect of heavy water on, A., III, 159.

effect of proteolytic enzymes on, A., III, 159.

pigment formation in, A., III, 253.

sex chromosomes of, reciprocal chiasmata in, A., III, 448.

South Brazilian, chromosome complements of, A., III, 628.

Drosophila melanogaster, bar eyes and wild type

of, A., III, 91. brain of, effect of reduction in numbers of ommatidia on, A., III, 159.

chromosomal aberrations and lethal mutations in, effect of X-rays on, A., III, 448.

chromosomes, effect on, of neutron and X-rays, A., III, 837.

egg-laying rate in, effect of X-rays on, A., III, 408.

mutants of, development of, A., III, 519. effect of hybridisation on, A., III, 4. morphogenetic action of glyoxaline derivatives on, A., III, 761.

populations of, balance and potence in, A., III, 519.

scute manifestation in, polygenes affecting,

A., III, 319. susceptibility of, ontogenesis of sex differences

in, A., III, 787. ultra-violet absorption by abdominal wall of, A., III, 215.

Drugs, action of, age of animals and, A., III, 556.

in relation to environmental temperature in mice, A., III, 214.

on smooth muscle of genitals in guinca-pigs, A., III, 580.

affecting reaction of mice to pain stimulation, evaluation of, A., III, 212

analgesic properties of, A., III, 135. antagonism of, A., III, 209. antimalarial. See Antimalarials.

antineuralgic, effect of, on ascorbic acid level, A., III, 683.

Drugs, classification of, by action on muscle, A., III, 580.

constitution and pharmacological action of, A., III, 209.

crude, evaluation of, C., 184. hypnotic. See Hypnotics.

modern, in prevention and treatment of tropical diseases, A., III, 278.

narcotic. See Narcotics.

reactivity-phase distribution relation insecticidal action as guide to, A., III, 214. therapeutic action of, in mice infected with

Trypanosoma congolense, A., III, 552. treatment with, of malaria, A., III, 831. See also Anæsthetics, Medicinals, Therapeutics, etc.

Drug fever, accompanying second courses of sulphapyridine, sulphapyrimidine, and sulphathiazole, A., III, 551.

Dryers, spray laboratory, C., 49.

Duboisia leichhardtii, alkaloids of, A., II, 383. Ducklings, vaccination of, against malaria, A., III, 560.

Ducts, thoracic. See Thoracic duct.

Ductus arteriosus, patent ligation of, A., III, 639

occlusion of, effect of, on cardiac output, pulse, and blood pressure in dogs, A., III, 639.

untreated, prognosis of, A., III, 99.

Ductus caroticus in pigeon, A., III, 786. persistance of, A., III, 626.

Duodenal juice, elimination of administered zinc in, measured by its radioactive isotope, in dogs, A., III, 213.

Duodenum, adenocarcinoma of, infrapapillary, A., III, 123.

atresia of, congenital, A., III, 113. cancer of, A., III, 263.

distension of, effect of, on blood-density and potassium, A., III, 742. first part of, blood supply to, A., III, 89.

inversion of, partial, A., III, 626. mucosa of, aminopolypeptidase secretion

from, after secretin injection in cats, A., III, 192. isoDuraldehyde, A., II, 334.

isoDurylacetylene, A., II, 98.

 β -180 Durylacrylic acid, β -chloro-, and β -iodo-, A., II, 98.

180 Duryl benzyl ketone, A., II, 369.

isoDurylpropiolic acid, A., II, 98.

isoDurylstyrene, ββ-dinitro-a-5-nitro-, A., II,

a-isoDurylstyrene, A., II, 298.

a-isoDurylvinyl chloride, A., II, 98.

Dust or Dusts, as inhibitor in insect reproduction, A., III, 348.

demolition, identification of, C., 114. dyed-fur. See under Furs. explosions of, testing for risk of, C., 208. hospital, streptococci in, A., III, 774. house, allergic activity of, A., III, 306. industrial, determination in, of silica, C., 62. See also Coal dust.

Dwarfism, as result of X-ray treatment, A., III, 686.

ateleiotic, with normal sexual function, due to hypopituitarism, A., III, 732. renal, A., III, 257.

Dyes, D and C green No. 5, determination in, of 1:4:-o-sulpho-p-toluidinoanthraquinone, C., 71.

determination of, on fibre and in solution, C.,

fat-staining, A., III, 713.

fungicidal and fungistatic effects of, A., III,

identification of, in foams, C., 119.

mixed, analysis of, spectrophotometrically, C., 147.

organic, anisotropy and fluorescence polaris-ation of, A., I, 77.

erystals, optical constants of, A., I, 196. spectra of, absorption, A., I, 164. effect of solvents on, A., I, 141.

Wurster, preparation and polymerisation of, A., II, 11.

Dyeing, processes of, A., I, 222.

Dykes, elastic, Placerville District, Colorado, A., I, 208.

vitrophyre, Capo Neddick, Maine, A., I, 92. Dysentery, bacillary, diagnosis and treatment of, sulphonamides in, A., III, 680.

endotoxin of, susceptibility to, of mice, A., III, 436.

in Dundee, A., III, 772.

prevention of, with sulphaguanidine, A., III, 207.

treatment of, with succinylsulphathiazole and sulphaguanidine, A., III, 207. with sulphaguanidine in Australian general hospital, A., III, 829.

with sulphonamides, A., III, 358.

bacilli. See under Bacilli. bacteriophage from, A., III, 302.

Flexner, treatment of, with sulphaguanidine, A., III, 757.

Shiga, treatment of, with sulphaguanidine in New Guinea, A., III, 207.

Sonne, carrier state in, A., III, 772.

epidemic, A., III, 73.

treatment of, with sulphapyridine, A., III, 358.

treatment of, in infants and children, A., III, 346.

Dysgerminoma, in pseudohermaphrodite, A., III,

Dysmenorrhœa, essential, urinary costrogens in, A., III, 110.

pain threshold in, A., III, 734. treatment of, with œstrogens, A., III, 810.

Dyspepsia, A., III, 192.

in the Army, A., III, 34. Dysprosium, spectrum of, K- absorption, A., I,

185.

arc, A., I, 113. Dysprosium salts, hydrated, spectra absorption, A., I, 191.

Dystocia, due to cystic dilation of ureter, associated with other teratologic defects, A., III, 597.

due to uterine inertia in labour, pituitary extract for, A., III, 809.

See also Childbirth, Labour, Maternity, Pregnancy, etc.

Dysuria, treatment of, with cestrogens, after menopause, A., III, 538.

See also Diuresis.

E.

EA-I. See β -Methylaminoheptane.

Ears, cochlea, microphonics of, A., III, 532. potentials of, elicited from bats by supersonic sounds, A., III, 464. sound frequencies in, analysis of, in man,

A., III, 406. differentiation of, independent, in birds, A.,

III, 387. ectoderm of, transplantation of, in axolotl, A., III, 711.

external auditory meatus of, cholesteatoma

of, A., III, 184. infections of, treatment of, with sulphon-

amides, dangers of, A., III, 651. injection and clearing method for, in rabbits, A., III, 714.

injury to, blast, A., III, 586.

inner, damping and selectivity of, A., III, 464. trypan-blue storage in, in rats, A., III, 450.

labyrinth, fistulas of, relation of eye movements to vascular changes in, A., III, 249.

microphonic effect of, and its biological significance, in teleosts, A., III, 533. static receptors of, depressor effects of cold

on, A., III, 586. middle, of tetrapods, A., III, 26.

muscles of, tensor tympani, voluntary contraction of, audiometric effect of, A., III,

normal and disordered, head noises in, A., III,

230 Ears, occupational conditions of, in airmen, A., III, 184. pathology of, functional, A., III, 532. reaction of, to explosions, A., III, 25. sound transmission through, and its relation to sound injury, A., III, 105. surgical wounds of, epithelial growth measurement of, in rabbits, A., III, 629. treatment of, vitamins in, A., III, 582. with X-rays, A., III, 805. vestibular apparatus of, rotation stimulation of, effect of, on facial expression and ears in rabbits, A., III, 184. See also Deafness, Hearing, Otoplasty, Otosclerosis, etc. Ear diseases, inner, A., III, 586. prevention and treatment of, biotherapy and chemotherapy for, A., III, 805. See also Otitis media, Tinnitus, etc. Earth, the, age of, A., I, 112. chemistry of, A., I, 293. composition of crust of, A., I, 257. Earths, rare, A., I, 159. absorption by, of slow neutrons, A., I, 189. analysis of, A., I, 51; C., 7. metals, alloys of, with mercury, A., I, 44. precipitation of, pH for, A., I, 231. spectra of, absorption, A., I, 113. luminescence, A., I. 116. salts, spectra of, absorption, A., I, 165. Earthworms. See under Worms. Eberthella typhosa, viability of, effect of acids and sugar on, A., III, 297. Echinocystic acid, conversion of, into oleanolic acid, A., II, 375. methyl ester, acetate, methanesulphonate of, A., II, 375. Echinoderms, eggs and larvæ, respiration of, A., III, 273. Eclampsia, cedema in, A., III, 719. placenta in, A., III, 469. post-eclamptic hypertension and, A., III, 328. pressure theory of, A., III, 469. renin in blood in, A., III, 576. treatment of, with estrogens, A., III, 736. Ectoderm of gill primordia, regeneration of, in axolotl, A., III, 787. Ectoparasites, control of, sulphur-feeding tests for, in animals, A., III, 362. resistance to, vitamin-A and, A., III, 546. Ectopia lentis, genetics of, A., III, 335. Ectopia testis. See under Testicles. Eczema, antigens for, A., III, 81. facial, photosensitising agent in, in sheep, A., III, 836. infantile, caused by herpes virus, A., III, 849. vitamin-A absorption in, A., III, 44. scrotal, due to vitamin deficiency, treatment of, A., III, 266. Eczema vaccinatum, A., III, 850. Eder's solution, mercuri-chloro-oxalate complex in, A., I, 159. Edestin, sulphur content of, effect on, of denaturation, A., II, 67. Efficients, determination in, of suspended solids, C., 38. plant-waste, determination in, of fat losses, C., 122. treatment of, Calco Chemical Division, Amer. Cyanamide Co., N.J., C., 119. Eggs. amphibian, yolk-laden, corrosive sublimate fixing solution for, A., III, 161. avian, albumin and yolk, assimilation in, under different incubating temperatures, A., III, 91. bioelectric potentials of, effect of ultraviolet radiation on, A., III, 30.

447.

dried, C., 81.

ition, C., 131. powdered, C., 82.

turkeys, A., III, 571.

shell of, fat deposition in, A., III, 188.

solubility determination of, C., 81.

developing, albumin and yolk of, distribution of dry constituents in, A., III, frozen and liquid, detection in, of decomposfertilisation, cleavage, and maturation of, in

Electric shock, interaction of, and insulin hypoglycemia, A., III, 646. Eggs, goose-barnacle, blue chromo-protein of, A., III, 537. hatching of, in relation to their weight, A., treatment with, A., III, 460. III, 109. in general hospital, A., III, 645. hen's, developing, acid-soluble phosphorus in, in psychoses, A., III, 645. A., III, 537. shell density of, in relation to hatchability Electrical conductivity, of aqueous solutions, A., I. 283. and chick viability, A., III, 734. vitamin-A potency of, A., III, 43. of colloids, A., I, 13. transition from, to superconductivity, A., I, marine, phosphate intake by, A., III, 252. market, cultivation in, of Diplococcus 242. Electricians, halowax acne in, A., III, 283. Electrocardiogram, and "two-step" exercise, pneumoniæ and Mycobacterium tuberculosis, A., III, 698. A., III, 637. changes in, after hyperpyrexia, A., III, 637. sea-urchin's, centrifugal and osmotic pressure effects in, A., III, 541. associated with thiamin deficiency in pigs, cleavage rate of, osmotic pressure effects on, A., III, 326. A., III, 447. QRS complex of, A., III, 14. cytoplasmic granules of, A., III, 521. electron microscopy of, A., III, 521. irradiated, membrane formation and cleavevolution of, as function of time, A., III, 637. in gall-bladder disease, A., III, 525. in glomerulonephritis, A., III, 637.

P—R interval in, shortened, diagnostic significance of, A., III, 14.

leads I, II, and III of, distribution in, of potentials applied to heat surface, A., III, age in, A., III, 519. Egg products, determination in, of sodium chloride, C., 31. Egg-white, ageing of, A., III, 557. 395. See also Avidin. Egonol, A., II, 167. legal aspects of, A., III, 170. Eidamella spinosa, biochemistry of, A., III, 502. myocardial infarct diagnosed and located by, Eimeria brunetti, coccidiosis in chickens due to, A., III, 637. of turtle's ventricle, A., III, 637. A., III, 622. Eimeria nieschulzi, growth of, effect of feeding-stuffs on, A., III, 143. Electrocardiograph, augmented unipolar extremity leads in, in myocardial infarct diagnosis, A., III, 637. Eisenia fætida, regeneration of, A., III, 319. Elmostearic acid, oxidation of, effect Electrocardiography, feetal, A., III, 797. lipoxidase on, A., III, 688. nomenclature in, standardisation of, A., III, β-Elæostearic acid, autoxidation of, A., I, 204. of ventricular hypertrophy, A., III, 15. Elaidic acid, methyl ester, photo-oxidation of, precordial leads in, standardisation of, A., III, A., II, 211. Elaidyl chloride, A., II, 211. 170. Electrocardioscope, phono-, C., 194. Elasmobranchs, inter-renal glands of, weight of, A., III, 385. Electrocorticogram, effect on, of atebrin, A., III, Elastic constants of cubic crystals, A., I, 219. Elastic materials, fibrous, thermodynamics of, of basal fore-brain areas, A., III, 644. Electrodes, adhesive paste for, C., 152. A., I. 125. Elastomers, stiffness test for, C., 173. bipolar, holder for, C., 151. Electric arc, carbon, candle-power of, C., 150. charcoal, for spectroscopic analysis, C., 98. glass, half-cell, and measuring apparatus for rare-gas-filled, grid control of, A., I, 94. use therewith, (P.), C., 101. potential of, A., I, 39. temperature of, and column stability, A., I, 161. valve amplifier for measuring, C., 101. birefringence, dispersion of, formulæ for, A., I, 268.sodium-magnesium glass for, C., 50. blankets. See under Blankets. temperature coefficient of, A., I, 250. breakdown, cumulative ionisation and, A., I, hydrogen, for polarography, C., 49. lead-mercury, potentiometric titration with, breakdown strength, effect of polarisation on, membrane, uses of, A., I, 156. A., I, 193. mercury, capacity of, in presence of multi-valent cations, A., I, 245. charge, point, interaction of, A., I, 27. circuits, automatic control of, C., 207. closing of, C., 51. oxygen, potential of, A., I, 39. current, breakdown field strength of, A., I, 1. ozone, potential of, A., I, 39. sealing of, into a steam chamber, C., 145. undulating, electrolysis with, A., I, 66. discharge, glow, in rare gases and their mixtures, A., I, 75. silumin, sparking of, in spectroscopic analysis, high-frequency, dissociation of gases in, A., work of separate, in polyclectrode systems, calculation of, A., I, 285. in acetylene-air flames, A., I, 116. Electrodialysis, electrokinetics in relation to, A., I, 281. in gases, diffusion of radiation in, A., I, 114. in two-chamber cell, A., I, 87. effect of irradiation on, A., I, 93. Electrodynamics, generalised, A., I, 264. positive column in, A., I, 187. Electroencephalograms, α-activity in, bilateral difference in, A., III, 528. spark, in gases, A., I, 94. intensity of, under carbon tetrachloride and water, A., I, 113. time-lag of breakdown of, at high bipolar and monopolar derivations in, in man, A., III, 582. pressures, A., I, 51. during malaria and typhoid vaccine-induced tubes, gas, as light sources, C., 151. fever in neurosyphilitic cases, A., III, 724. effect on, of erythroidine-induced muscle paralysis, A., III, 102. hydrogen, C., 151. removal of gas from, at low pressures, A., of lesions of basal ganglia, hypothalamus, I. 94. fields, rotating, effect of, on solids, A., I, 79. and thalamus of monkeys, A., III, 179. of lowered barometric pressure, A., III, static, theory of, A., I, 74. heaters, C., 151. 331. of overventilation and its relation to age, heating unit, C., 103. lamps, carbon arc, irradiation with, effect of, A., III, 180. of decorticate monkeys, A., III, 402. on adrenal cortex and blood pressure, A., III, 534. of epileptics, classification of, A., III, 645. tungsten-in-quartz, use of, in photo-electric Electroencephalography, clinical, A., III, 22. radiometry, C., 149. focal abnormalities in, in epilepsy, A., III, ultra-violet, for analysis in textile industry, 644. in children, A., III, 102. C., 149.

Electrofit therapy, results of, and its complications, A., III, 645. Electrographic analysis. See under Analysis. Electrokinetics, A., I, 126. Electrolysis of water, A., I, 178. with undulating current, A., I, 66. Electrolytes, colloidal, A., I, 103. osmotic activity of, A., I, 125. fluidity of, A., I, 57. removal of, from solutions, lecture experiment on, A., I, 207. strong, density of solutions of, A., I, 102. dissociation of, in presence of common ions, A., I, 249. electrolytic conductivity of, A., I, 104. ionisation of, A., I, 37, 127, 249. viscosity of solutions of, in relation to concentration, A., I, 220. weak, dissociation constants of, effect of temperature on, A., I, 62. Electrolytic analysis. See under Analysis. conductivity, hydrogen linkings and, A., I, in the Nernst pencil, A., I, 129. of strong electrolytes, A., I, 104. double layers, ionic interaction in, A., I, 200. field plotting troughs, prevention of capillary disturbance in, C., 152. solutions. See under Solutions. Electrons, acceleration of, by spiral electric fields, C., 103. avalanches of, cloud-chamber photographs of, C., 205. beams, effect of space charge on, A., I, 74. collisions of, with sound quanta statistics of, A., I. 74. counting apparatus for, A., I, 210. diffraction of, applications of, A., I, 5. emission of, from insulated metal surfaces, A., I, 74. from oxide-coated cathodes, A., I, 93. fast, scattering and polarisation of, by heavy clements, A., I, 186. field of, A., I, 74. velocity distribution of, A., I, 187. free-falling, spatial distribution of, A., I, 162. high-energy, penetration of foils by, A., I, 233. impulse-energy tensor of, A., I, 235. micro-analysis by, A., I, 74. mobility of, in argon, A., I, 186. in electromagnetic field, A., I, 27. in gases, measurement of, by means of X-ray bursts, A., I, 262. in helium, A., I, 186. new type of, A., I, 186. secondary, emission of, from metals, A., I, 93, from transition metals, A., I, 74. energy distribution in, A., I, 114. photographic action of, produced from metals by X-rays, A., I, 262. spinning, theories of, A., I, 138. uniform-velocity, currents carried by, A., I, Electron microscope. See under Microscope. Electronarcosis, brain metabolism during, A., III, 528. See also Narcosis. Electronegativity, relation of, to atomic number, quantum number, and valency, A., I, 143. Electronic charge, values for, A., I, 186. Electrophorus electricus, electric organ of, action potential and enzyme activity in, A., III, Electroplating, solutions for, determination in, of silver cyanide, C., 5. Electroretinogram, intensity-e.m.f. relationships of, of beetles with visual diurnal vision, A., III, 183. Electroviscosity. See under Viscosity. Elektron AZ91, orientation in, A., I, 57. Element, No. 93, A., I, 51.
position of, in system of elements, A., I, 114. No. 94, position of, in system of elements, A., I. 114.

Elements, co-ordination numbers of, A., I, 268. distribution of, A., I, 134, 136. liquid, X-ray diffraction by, A., I, 167. III, 279. lithium to neon, atomic wave functions for, A., I, 264. luminous excitation of, atomic-ray apparatus for, C., 98. nitrogen and sulphur groups, basic strength of organic oxides of, A., I, 16. periodic classification and polygonal surface of, A., I, 139. periodic system of, A., I, 115, 209. ÎII, 773. representation of, A., I, 188. radioactive, in rocks, A., I, 258. in U.S.S.R. soils, A., I, 296. rare, determination in, of gold, C., 59. 13. in pegmatites, C., 114. recovery of, in science and industry, A., I, 136. See also under Earths, rare. 104. rôle of, in living processes, A., III, 604. trace. See Trace elements. Eleusine coracana, vitamin-B1 content of, A., III, 547. C., 113. Ellagic acid, dimethyl ether diacetate and methyl ether tri- and tetra-acetates, A., II, 39. Ellagitannins, determination of, microchemically, C., 192. Elliptocytosis, A., III, 452. 438. Elodea, photosynthesis in, A., III, 230. Elodea canadensis, respiration of, A., III, 228. Emaciation, due to mustard gas, A., III, 62. Embolectomy, treatment with, of arterial embolism of extremities, A., III, 527. ÎII, 302. Embolism, after closed injuries to extremities, A., III, 11. air, A., III, 17. arterial, of extremities, treatment of, with 374. anticoagulants, embolectomy, and vasodilators, A., III, 527. III, 150. fat-, study of, A., III, 242. in gynecology and obstetrics, A., III, 11. pulmonary, climatic conditions at Davos in relation to, A., III, 11.
treatment of, by intravenous morphine drip, A., III, 799. Embolus, saddle, A., III, 172. Embryos, anuran, pronephric duct development in, A., III, 235. avian, development of, stimulation of, by X-rays, A., III, 30. cells of, radiosensitivity of, A., III, 797. chick, acetylcholine in, A., III, 3. chemistry of, A., III, 140. cultivation of, in vitro, A., III, 387. cytochrome oxidase in, A., III, 448. heart cells of, mitotic activity of, effect of 504, 505. thyroxine on, A., III, 320. malformations of, season and sex in relation III, 698. to, A., III, 91.
microphthalmia in, hereditary, morphogenesis of, A., III, 386.
mortality of, effect of formaldehyde fumigation on, A., III, 30. III, 374. pituitary development in, A., III, 158. transplanted limbs of, A., III, 3. vitamin-B content of, during development, A., III, 199. yolk sac of, mouse tumours cultivated in, A., III, 820. III, 849. circulation of, in sharks, A., III, 318, development of, muscular au automatism modifications during, A., III, 3. human, development and growth of, A., III, 626. 374. intra-uterine, orientation of, for sectioning, A., III, 390. mouse, X-ray irradiation of, in utero, A., III, pig, with bifid notochord, biaxiate brain, and 78. paired hypophyses, A., III, 627. tissues of, mammalian, heterologous transplantation of, A., III, 544. respiratory activity of, A., III, 4. See also Eggs, Fœtus, Ova, etc. A., III, 582. Embryology, in war-time Britain, A., III, 158. Emerita talpoida, oxygen consumption of, effect of season and temperature on, A., III, 49.

Emetine, Hofmann degradation of, and its dehydrogenation to emetamine, A., II, 281. treatment with, of pyogenic infections, A., Emotional states, somatic change in, A., III, 22. Emphysema, bronchiolar lymphoid hyperplasia as cause of, A., III, 245. of lungs. See under Lungs. Empyema, cavity, obliteration of, with free fat transplant, A., III, 458. staphylococcal, in children and infants, A., Emulsifiers, water-in-oil, A., II, 228. Emulsin, A., II, 7. Emulsions, chromatic, optical theory of, A., I, determination in, of oil, C., 56. of phenolphthalein, C., 37. mechanical stability of, determination of, C., oil-water, determination in, of oils, C., 171. preparation of, with vibrator, C., 56. separation of, theory of, A., I, 124. Enamels, adherence of, to cast iron, test for, determination in, of pigments, C., 26. Enantiomorphs, resolution of, A., II, 11. Encephalitis, complicating measles, A., III, 303, epidemic, diagnosis of, by complement fixation tests, A., III, 302.

Japanese and St. Louis, vaccines for, A., equine, chronic, A., III, 565. equine and St. Louis, A., III, 150. experimental, antibody production and resistance to, after vaccination, A., III, St. Louis, transmission of, by dog ticks, A. spring-summer, Russian, in mice, A., III, virus, fox, detection of, A., III, 150. immunological relationships between types of, A., III, 775. Russian, in man, relation of, to louping ill virus in sheep, A., III, 511. St. Louis, A., III, 78. titration of, and mouse virus, in tissue cultures, A., III, 438. transmission of, by American dog ticks, A., III, 775. by mosquitoes, A., III, 150. West Nile, transmission of, by Aedes albopictus, A., III, 78. Encephalitozoon in infections of animals, A., III, Encephalomeningitis due to pneumococci, A., Encephalomyelitis, after vaccination in Fife, A., equine, transmission of, to owls, A., III, 374. Venezuelan, in man, A., III, 78. post-vaccinial, A., III, 78. virus, equine, acquired cellular resistance to, A., III, 564. Eastern and Western, A., III, 78. infection of birds with, A., III, 303. Venezuelan, infection with, in man, A., Western, depression of glycolysis of embryonic tissues by, A., III, 510. detection of, A., III, 150. transmission of, by mosquitoes, A., III, mouse, A., III, 150. serological relation of, with poliomyelitis viruses, A., III, 564. Theiler's, biological changes in, A., III, Theiler's, neutralisation of, by human sera, A., III, 151. Encephalopathy, genesis of, due to salvarsan, Endamæba coli, cultivation, encystation, and excystation of, A., III, 503. Endamaba histolytica, A., III, 70. growth requirements of, A., III, 293.

Endocarditis, bacterial, incidence of, in rheumatic heart disease, A., III, 242.

recovery from, after ligation of patent ductus arteriosus, A., III, 798.

treatment of, with sulphapyrimidine, A., III, 204.

meningococcal, in immunised horses, A., III, 563.

Streptococcus viridans, treatment of, with

sulphathiazole, A., III, 204. subacute, with spirillum infection, A., III,

773. Endocarditis lenta, early lesions in, A., III,

223. Endocardium, cushion development defect of, as

source of cardiac anomaly, A., III, 627. Endocrinology, A., III, 607. Endometrioma, of colon. See under Intestines,

Endometrioma, of colon. See under Intestines large.

Endometriosis, A., III, 408. lung. See under Lungs.

pelvic, treatment of, with progesterone, A., III, 811.

pregnancy and, A., III, 739.

Endometrium, biopsy of, A., III, 31.

value of, compared with vaginal smears, A., III, 467.

decidua-like changes in, without pregnancy,
A., III, 410.

histology of, during lactation amenorrhoa and its relation to ovarian function, A., III, 112.

implants of, intraocular, response of, to cestrogen in rabbits, A., III, 735.

interstitial cell of, and growths originating therefrom, A., III, 109.

transplants of, intraocular, vascular changes in, in pregnant rabbits, A.. III, 470.

Endomyces vernalis, growth of, on zeolite, A., III, 68.

resistance of, to pyrithiamin, A., III, 614.

Enema, barium, sigmoidoscopy preceding, in colon study, A., III, 412.

magnesium sulphate, magnesium poisoning after, A., III, 814.

Energy, electrical, of cylindrical particles, A., I,

of diffuse double layers, A., I, 269, radiant, measurement of, C., 201.

Engines, internal combustion, temperature changes in, C., 151.

Enol-lactones, A., II, 227.

Enclase, isolation and crystallisation of, A., III, 690.

Entada pursætha, chemistry and pharmacology of, A., III, 363.

Enteritis, with pneumonia, in calves, virus causing, A., III, 375.

Enterobacteriaceæ, culture of, with peptones, A., III. 616.

reduction by, of trimethylamine oxide, A.,

III, 146.

Enterobius vermicularis, cleaning of, for class study, A., III, 714.

eggs, irradiation of, A., III, 687. Enterococci, nutrition of, A., III, 695

Enterococci, nutrition of, A., III, 695. Enterocrinin, bioassay of, A., III, 657.

preparations of, fractionation of, A., III, 657.

Entropy of homologous solids, A., I, 219.

Enuresis, treatment of, with androgens, A., III, 254.

Enzymes, A., III, 498.

action on, of substances affecting circulation, A., III, 215.

activity of, effect of caffeine and coffee extract on, A., III, 657.

in normal and tumour tissues of mice, A., III, 431.

adsorption of, on solid-liquid interfaces, A., III, 764. amylolysis by, A., III, 432.

assay of, for B vitamins, A., III, 751.

commercial preparations of, containing inulinand sucrose-hydrolysing enzymes, A., III,

crystalline, p-aminobenzoic acid and biotin in, A., III, 364.

Enzymes, distribution of, in cells and tissues, A., III, 217.

from rat's liver, producing hydrogen sulphide from cysteine, A., III, 216.

glycolytic, of synovial fluid, A., III, 1. in germinating seeds, A., III, 366.

in respiratory phosphorylation, A., III, 558. inactivation of, A., III, 68.

by irradiation, A., III, 838.
inhibition of, by thiol groups, and their reactivation by glutathione, A., III, 64.
law of mass action and, A., III, 431.

liberation of, from perfused liver, at different temperatures, A., III, 721. pancreatic. See under Pancreas.

protein, disaggregating, crystalline, A., III, 287.

proteolytic, activity of, from regions of axolotl body, A., III, 288.

measured by gelatin viscosity method, A., III, 67.

crystalline, action of, on angiotonin, A., III, 397.

digestion of living tissues by, A., III, 500. reactions of, with inhibitor and substrate, A., III, 766.

relation between sex hormones and, A., III, 253.

respiratory, determination of, in animal tissues, C., 37.

Schardinger, in biological iodination, A., III, 558.

systems, effect of sodium salicylate on, A., III, 501.

inhibition of, by carcinogenic metabolic products, A., III, 498.

vitamin- B_1 -destructive, distribution of, in fish, A., III, 45. Enzyme action, A., III, 141, 368.

effect on, of associated colloids, A., III, 432.

of clavatin, A., III, 764. of colchicine and 3-indolylacetic acid, A.,

III 288
inhibition of, A., III, 217, 687, 840.
inhibitors of, antagonism and synergism among, A., III, 285.

mechanism of, A., III, 687. Enzymology, advances in, A., III, 784.

Eosinophilia, of spleen, with sudden death, A., 111, 393.

Ephedrine, determination of, C., 136. by Kjeldahl distillation, C., 86.

effect of, on small blood vessels of rabbit's ear, A., III, 639.

sulphate, effect of, on red-cell count in man, A., III, 321.

(-)-Ephedrine, physical constants of, A., II, 131.

Ephedrine series, optical isomerides in, A., II, 131.

Ephedronium sulphadiazine, A., II, 352.

Ephedronium sulphathiazole, A., II, 352. Ephestia kuhniella, testis pigmentation in, effect

of hatching order on, A., III, 236. Epichlorhydrin, reaction of, with Grignard reagents, A., II, 14.

Epidermis, action on, of methylcholanthrene, chemistry of, in mice, A., III, 477.

calcium and sodium content of, effect of methylcholanthrene on, A., III, 262.

carcinogenesis in, chromosomal changes in, A., III, 599.

from methylcholanthrene, mitotic count of, A., III, 663.

cell division in, maximum, localisation of, A., III, 629.

presumptive, effect of protein extracts of neural plate plus chordamesoderm on, A., III, 387.

See also Epithelium, Skin, etc. Epididymis, physiology of, in mammals, A., III,

Epihomocamphorolactone, α-hydroxy-, and its hydrate and p-nitrobenzylthiuronium salt, A., II, 268.

Epihydrinaldehyde, detection of, in cosmetics, C., 137.

Epilepsy, A., III, 247.

age, incidence, and prognosis of, A., III, 22. electroencephalographic classification o patients with, A., III, 645.

electroencephalographic foci associated with, A., III, 644.

gonadotropin excretion in, in man, A., III, 33. treatment of, with azosulphamide and phenobarbital, metabolism during, A., III, 645.

Epiloia, A., III, 22.

Epinephrine, amines related to, A., II, 295. Epiphysis, skeletal, pattern of, effect of illness and other factors on, A., III, 234.

See also Bone and Cartilage. Epiphysis cerebri. See Pineal gland. Epithelioma, calcified, A., III, 668.

of check, after X-ray treatment for superfluous hair, A., III, 822.

Epithelisation, rate of, effect of homologous tissue extracts on, A., III, 161.

Epithelium, bronchial, metaplasia of, after benzpyrene application, in rats, A., III, 543. growth of, action of antiseptics on, C., 78.

growth of, action of antiseptics on, C., 78. ingrowth of, after cataract extraction, treatment of, A., III, 802.

regeneration of, effect on, of different agents, A., III, 713.

sheet of, in tissue culture, effect of l-ascorbic acid on, A., III, 521.

vaginal. See under Vagina. See also Epidermis, Skin, etc.

1:2-Epoxides, action of, on proteins, A., II, 356.
8:14-Epoxy-3(β)-acetoxycholestan-7-ol, and its derivatives, A., II, 20.

8:14-Epoxy-3(\(\textit{\text{8}}\))-acetoxycholestan-7-one, A., II, 20.

8:14-Epoxy-3(β)-acetoxycholestan-15-one, A. II, 21.

8:14-Epoxy-3-acetoxy- Δ^{22} -stigmasten-7-one, A., II, 20.

8:14-Epoxycholestane-3(β):7-diol, A., II, 20. βy-Epoxy-ay-dimesitylpropan-a-one, geometrical isomerides of, A., II, 102.

βy-Epoxy-aa-dimethylbutyric acid, β-cyano-, methyl ester, A., II, 232.

μγ-Εροχy-αβ-dimethyl-n-butyric acid, ethyl ester, A., II, 181.

7:9-Epoxy-7:9-diphenyl-8:8-dimethylperinaphthindane, A., II, 300.

a-βζ-Epoxy-d'-heptene-γ-carboxylic acid. See 2:6-Dimethyl-5:6-dihydro-1:2-pyran-3carboxylic acid.

1:4-Epoxycyclohexane, A., II, 98.

3:6-Epoxycyclohexene, preparation of, from furan and ethylene, A., II, 239.

4:4'-Epoxy-3:3'-methylenebiscoumarin. See 3:2:5:6-Di-(3':4'-coumarino)-4-pyran. 3:8-Epoxy-1'-phenyl-1':2':3'-triazolinocuclo-

3:8-Epoxy-1'-phenyl-1':2':3'-triazolinocyclohexane, A., II, 239.

 βγ-Epoxy-n-propyl n-dodecyl ether, A., II, 317.
 Epsomite. See Magnesium sulphate heptahydrate.

Equations, Debye-Hückel, constants in, A., I, 17.

diffusion, A., I, 220.

in turbulent media, A., I, 101.

Dittus-Boelter, nomograph of, A., I, 32. non-stoicheiometric, A., I, 204, 229.

of wave propagation in gases, A., I, 169. Thomson-Gibbs, A., I, 194.

Equation of state for saturated fluids, A., I, 148. Kritschevski-Kazarnovski, for mixed gases, A., I, 197.

van der Waals', molecular compressibility and, A., I, 274.

surface tension and, A., I, 222. Equilibrium, diagrams of, mass law equations

for, A., I, 62. gas-gas, in binary systems, A., I, 249.

microscopic, in ampholytes, A., I, 126. of analytical reactions with high velocity coefficients, C., 43.

of gas mixtures at high pressures, A., I, 175. problems of, A., I, 62. solid-solution-vapour, for salts, A., I, 281.

thermal, of gases with hot surfaces, A., I,

Equilibrium constants, calculation of, A., I, 37. Eranthemum, photosynthesis in, in presence of anthocyanins, A., III, 230.

Erbium, separation of, from yttrium, A., I, 159. spectrum of, K absorption, A., I, 185.

Ergograph for teaching, C., 43.

Ergometrine, determination of, in mixtures with ergotoxine, microchemically, C., 136.

hydracrylate, effect of, on arterial, placental, uterine, and venous pressures in pregnant women, A., III, 553.

prophylactic use of, reduction of post-partum morbidity by, A., III, 496.

Ergonovine. See Ergometrine. Ergosterol, determination of, colorimetrically, C., 192.

neoErgosterol, acetate of, oxidation of, A., II, 49. Ergosteryl iodide, preparation and properties of, A., II, 374.

Ergot, lipins in, A., III, 501. Oregon, analysis of, C., 37.

powdered, labour induced by, A., III, 135.

sclerotium, assay of, C., 189. Ergot alkaloids, A., II, 86. analysis of, C., 136.

comparison of, A., III, 360, 554, 832.

Ergot extracts, preparation and determination of, C., 86.

Ergotamine, tartrate, treatment with, of herpes zoster, A., III, 62.

treatment with, of post-partum period, A., III, 429.

Ergotoxine, effect of, on small blood vessels of rabbit's ear, A., III, 639.

Ergotrate. See Ergometrine hydracrylate. Eriodictyon augustifolium, phytochemistry of, A., III, 855.

Erisiphe graminis tritici, wheat infection by, A., III, 87, 433.

Eruptions, varicelliform, Kaposi's, treatment of, with sulphonamides, A., III, 132.

See also Dermatitis, Skin, etc. Erysipetothrix rhusopathiæ, culture media for, crystal-violet and sodium azide in, A., III,

Erysothiopine, A., II, 354. Erysothiovine, A., II, 354.

Erysovine, sulphapyridine salt, A., II, 354. Erythræmia, due to adrenaline injections and traumatic shock, in dog and man, A., III, 96.

Erythrina, Argentine, hypophorine from, A., III, 856.

Erythrina alkaloids, A., II, 354.

pharmacological action of, A., III, 608. Erythrina crista galli, extract of, pharmacological action of, A., III, 608.

Erythrina glauca, alkaloids of, A., II, 354. Erythrina pallida, alkaloids of, A., II, 354. Erythrina poeppigiana, alkaloids of, A., II, 354. Erythroamylase, particles, nature of, A., III, 432.

Erythrobalanus, tylose in. A., III, 316. Erythroblasts, orthochromatic, giant, A., III,

Erythroblastosis, Rh subtypes in, A., III, 451. with congenital syphilis in new-born infant, A., III, 162.

Ertyhroblastosis fœtalis, A., III, 451, 631, 633. in one of twins, A., III, 166.

incidence of, in different families, A., III, 451. irregular maternal agglutinin in relation to, A., III, 451.

pathogenesis of, A., III, 322. Rh factor and, A., III, 7, 94, 451. Rh-positive blood scrum in, A., III, 791.

survival of transfused erythrocytes in, in newborn, A., III, 630. Erythrocytosis, after hæmorrhage, A., III. 243

β-Erythroidine, and its derivatives, A., III, 608. DL-Erythronamide tribenzoate, A., II, 326. d-Erythronic acid, $\beta\gamma$ -di-p-nitrobenzoyl derivative, methyl ester, A., II, 213.

DL-Erythronic acid, tribenzoate, and its

chloride, A., II, 326. Erythropoiesis, effect on, of arsenic, A., III, 6.

stomach in relation to, A., III, 6. DL-Erythrose tribenzoate, synthesis of, A., II, Erythrosin, adsorption of, on silver halides, effect of salts on, A., I, 171.

Escherichia coli, cell-free extracts of, pyruvate dissimilation by, A., III, 146.

cultures of, colour formation in, in presence of sulphonamides, A., III, 561.

enzyme preparation from, carbon dioxide fixation and succinic acid formation by, A., III. 216.

growth of, inhibition of, by atebrin, effect of polyamines on, A., III, 846.

effect of polyamines and spermidine on, A., IIÎ, 73.

intermediary carbohydrate metabolism of, A., III, 297.

oxidation by, effect of diamidines on, A., III, 617.

pyruvate exidation by, accelerators of, A., III, 146.

short visible and ultra-violet irradiation of, A., III, 371.

synergistic action of sulphathiazole and urea on, A., III, 436.

viability of, effect of acids and sugar on, A., III, 297. Eserine, C., 136.

and its derivatives, A., II, 241; III, 494, 607.

determination of, C., 136. on nervous contractions, A., III, 647.

inhibition by, of choline-esterase activity of nervous tissues, A., III, 643. reaction of, with acetylcholine and choline-

esterase, A., III, 766.

Esox lucius, heart development in, A., III, 318. Esters, acetolysis of, A., II, 369.

aliphatic, parachors of, and structure, A., I, 238.

carboxylation and carbethoxylation of, with triphenylmethide reagent, A., II, 320. carboxylic, alkyl exchange of, A., II, 220.

determination of, in ethyl alcohol, C., 21. fatty unsaturated, determination in, peroxides, C., 121. hydrolysis of, by water, action of chlorine

atoms on, A., I, 88. semi-micro-, C., 195.

interchange of, A., II, 287. Esterase, activity of, A., III, 666. in cobra venom, A., III, 689.

phenol sulphur, activity of, effect of alkaloids on, A., III, 139.

procaine, A., III, 65.

activity of, effect of prostigmine, eserine, etc., on, A., III, 65. in blood-serum, A., III, 833.

specificity of, A., III, 65. See also Choline esterase.

Esterification, catalysed by acid chlorides, A., II, 179.

Etching agents, for metals, C., 108. Ethane, heat of solution of, A., I, 38.

Ethane, hexabromo-, and hexachloro-, spectra of,

Raman, A., I, 237. aaa-trichloro-, entropy, heat capacity, and vapour pressure of, A., I, 147.

hexachloro, treatment with, of cat opisthorchosis, A., III, 214.

aaβ-tri-, and a-chloro-a-bromo-β-nitro-, aaaβ-tetra- and aaaββ-penta-chloro-β-nitro-, A., II, 357.

αβ-dichloro-α-nitro-, A., II, 358.

aaa-trifluoro-, entropy, thermochemistry, and vapour pressure of, A., I, 121.

difluoromonochloro-, thermal properties of, A., I, 31.

aa-diiodo-βββ-trifluoro-, A., II, 4. nitro-, preparation of, A., II, 89.

-Ethanesulphonyl-n-butyric acid, α-amino-y-β'hydroxy-, and its a-acetyl derivative, A., II,

 $p ext{-Ethane sulphonyl phenylar sonic}$ p-β-hydroxy-, A., II, 283.

Ethanolamine, spectrum of, Raman, A., I, 4. Ether. See Ethyl ether. Ethers, acetylenic, A., II, 287.

dielectric constants and dipole moments of, A., I, 193.

Ethers, anisole type, cleavage of, by Grignard reagents, A., II, 367.

compounds like, A., I, 88. 2-Ethoxy-6-acetyl-2-methyltetrahydropyran, semicarbazone, A., II, 198.

7-Ethoxyacridine, 2-nitro-5-amino-, purification of, A., II, 171.

4-Ethoxy-2-allylphenol, and its acetate, A., II, 346.

4-Ethoxy-1-p-anisylpyridaz-6-one, A., II, 145. 1-Ethoxybenzfuran, 4-hydroxy-, A., II, 346.

6-Ethoxybenzthiazole, 2-nitro-, A., II, 146. y-Ethoxy-Δay-butadiene, aβ-dichloro-, A., II, 149.

y-Ethoxy-Δα-butylene, aβ-dichloro-δ-iodo-, A., II, 149. 4-Ethoxy-1-p-carbethoxyphenylpyridaz-6-one,

A., II, 145.

4-Ethoxycoumaran-1-one, A., II, 346.

4-hydroxy-, 1-Ethoxy-3:5-dimethylbenzfuran, A., II, 346.

2-Ethoxydiphenyl, 3:5-dinitro-, A., II, 363.

α-Ethoxydiphenylacetic acid, A., II, 77. 3-Ethoxy-1:1-diphenylindane, A., II, 193.

 $p extstyle{-}eta extstyle{-}\text{Ethoxyethanesulphonylphenylarsonic}$ acid, A., II, 283.

p- β -Ethoxyethanesulphonylphenylarsonic acid. p-β'-hydroxy-, sodium salt, A., II, 283.

 β -Ethoxyethyl p-toluenesulphonate, A., 11,

p-β-Ethoxyethylthiolphenylarsonic acid, A., II, 283.

acid, p-β-Ethoxyethylthiolphenylarsonic p-β'-hydroxy-, and its sodium salt, A., II, 283.

a-Ethoxy-Δa-n-hexenoic acid, β-cyano-, ethyl ester, A., II, 213.

2-Ethoxymethylbenziminazole, A., II, 84.

acid. 2-Ethoxy-5-methyl-β-benzyleinnamic ethyl ester, A., II, 344.

 γ -Ethoxy- γ -methyl- A^{α} -butene, δ -iodo-, A., II, 245.

Ethoxymethylcarbamylsemicarbazide, benzylidene derivative, A., II, 365,

2-Ethoxy-5-methylphenyl benzyl ketone, A., II, 344.

4-Ethoxynaphtha-1':2'-1:2-furan, 4'-hydroxy-, A., II, 346.

4-Ethoxy-1-p-nitrophenylpyridaz-6-one, A., II, 145.

1-Ethoxy-1:2:3:5:6-pentaphenylindene, A., II, 124. 2-Ethoxy-4-phenyl-2-methyl-3:4-dihydro-

coumarino-3':4'-5:6-1:2-pyran, A., II, 345. a-Ethoxy-a-phenyl-1:8-naphthalide. $\delta\text{-Benzoyl-1-naphthoic}$ acid, $\psi\text{-ethyl}$ ester. 2-a-Ethoxyisopropylbenziminazole, A., II, 84.

6-Ethoxy-2:4:5-trimethylbenzyl chloride. 3-hydroxy-, A., II, 200.

2-Ethoxy-3:5:6-trimethylcoumarone, A., II, 54. a-Ethoxy-a-veratrylethylene oxide, A., II, 162. Ethyl, free, chemical behaviour of, at low

temperatures, A., II, 177. Ethyl alcohol, concentration of, effect of, on blood-alcohol curve absorption and shape,

A., III, 60. determination in, of aldehydes and esters,

C., 21. determination of, in blood, C., 174.

in blood and tissues, its absorption and distribution, A., III, 276; C., 76. in spirit of camphor, C., 137.

effect of, on pupillary light reflex in man, A., III, 530.

electrolysis of, A., I, 43. fractionation of mixtures of, with ethyl

ether, apparatus for, C., 117.

intoxication by. See under Poisoning. metabolism of. See under Metabolism. physiological action of, effect of congeners of

distilled spirits on, A., III, 59. potential barriers in, and equilibrium of its formation, A., I, 62.

supercooled, structure of, A., I, 80. toxicity of, effect of age of mice on, A., III,

428.

in relation to isopropyl alcohol fed and externally applied to rats, A., III, 555.

A. & C .-- H*

Ethyl alcohol, ultrasonic wave velocity in mixtures of, with water, A., I, 33.

Ethyl bromide, reaction of, with acetaldehyde, A., I, 157.

chloride, anæsthetic activity of. See under Anæsthetics.

double molecules in, determined from thermal conductivity, A., I, 268. thermal conductivity of, A., I, 168.

Ethyl ether, anæsthetic activity of. See under Anæsthetics.

equilibrium of, with hydrocyanic acid, A., II, 71.

fractionation of mixtures of, with ethyl alcohol, apparatus for, C., 117.

peroxidation of, A., II, 359. vaporisation of, "to and fro" canister for, A., III, 832.

Ethyl $\Delta\beta$ -n-heptinenyl ether, A., II, 30. iodide, $\beta\beta\beta$ -trifluoro-, A., II, 30. nitrite, thallium salt, A., II, 66.

p-Ethylacetophenone, p- β -amino-, p- β -acetyl derivative, A., II, 134.

a-Ethyladipic acid, di-p-phenylphenacyl and ethyl esters, A., II, 154.

β-Ethyladipic acid, and its di-p-phenylphenacyl ester, A., II, 154.

a-Ethylallylthiocarbamide, A., II, 37.

N-Ethyl-N'-allylthiocarbamide, N- β -hydroxy'-, A., II, 185.

a- and y-Ethylallylthiocarbimides, A., II, 37. Ethylamine, β-chloro-, hydrochloride, A., II, 249.

-trifluoro-, and its hydrochloride, A., II, 4.

Ethylamines, parachors and surface tensions of, A., I, 99.

4-Ethylaminobenzenesulphon-β-hydroxyethyl-

amide, 3-nitro-4-β-hydroxy-, A., II, 313. 6'-Ethylaminoapocupreine, 6'-β-hydroxy-, and its dihydrochloride, A., II, 174.

9-Ethylamino-2-methoxyacridine,

6:9-B-dichloro-, hydrochloride, A., II, 83. β -Ethylaminopropionitrile, and its picrate, A., II, 291.

8-y-Ethylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

8-Ethyl-y-aminopropylamino-6-methoxyquinoline, 8-\(\beta'\)-amino-, and its salts, A., II,

8-β*hydroxy-, and its salts, A., II, 57. 2-Ethylaminothioformylglyoxalidine, 2-β-amino-,

and its picrate, A., II, 280. 2-Ethylaminothioformyliminazoline.

2-EthylaminothioformylgIyoxalidine. Ethylaniline, determination in, of diethylaniline,

C., 22. Ethylaniline, 2:4-d:nitro-β-amino-, and its

hydrochloride, A., II, 56. 2-Ethylanilino-1:2:3:4:5:6-hexaphenyldihydrosomelamine, A., II, 191.

3'-Ethyl-1'-azobenzene-4-sulphonamide, 4'-hydroxy-, A., II, 257.

2-Ethylbenzaldehyde, 4-hydroxy-, and its azine, A., II, 13.

3-Ethylbenzaldehyde, 2:4:6-trihydroxy-, and its 4:6-diethyl ether, A., II, 199.

Ethylbenzene, β-chloro-aaββ-tetrafluoro-, A., II,

ββ-dichloro-aaβ-trifluoro-, A., II, 102. βββ-trichloro-aa-difluoro-, A., II, 102. αβββ-tetrachloro-a-fluoro-, A., II, 102. pentafluoro-, A., II, 102.

1-Ethylbenzene, 4-amino-1-β-hydroxy-, hydrochloride of, A., II, 283.

p-Ethylbenzenesulphonxanthylamide, A., II, 156. p-Ethylbenzoic acid, p-β-amino-, and its derivatives, A., II, 134.

o-Ethylbenzophenone, semicarbazone, A., II, 223,

m-Ethylbenzophenone, semicarbazone, A., II, 223.

p-Ethylbenzophenone, 2:4-d:nitrophenylhydrazone and semicarbazone, A., II, 223.

p-Ethylbenzoyl chloride, p-β-amino-, hydrochloride, A., II, 134.

β-p-Ethylbenzoylpropionic acid, p-β'-cvano-, A., II, 298.

o-Ethylbenzyl bromide, o-β-bromo-, synthetic application of, A., II, 65.

-p-Ethylbenzylethylenediamine, dihvdrochloride, A., II, 366.

5-Ethyl-5-n-butyl-2:4-dithiobarbituric acid, A., II, 203.

5-Ethyl-5-180butyl-2:4-dithiobarbituric acid, A., II, 203.

α-Ethyl-α-n-butylglutaric acid, A., II, 185. β -N-Ethyl-N-n-butylpropionitrile,

 β -N- β '-hydroxy-, picrate, A., II, 82.

9-y-N-Ethyl-N-n-butylpropylamino-2-methoxyacridine, 6-chloro-9-y-N-B'-hydroxy-, dihydrochloride, A., II, 83.

5-Ethyl-5-180butyl-2:4:6-trithiobarbituric A., II, 203.

Ethylearbamide, 8-hydroxy-, benzoyl derivative, A., II, 238.

9-Ethylcarbazole, 9-β-cyano-, A., II, 291.

Ethylcarbothiolon-a-hydroxybutyric acid, and its salts, A., II, 32.

Ethylcellulose, ingestion of, effect of, on rats, A., III, 265.

osmotic pressure and viscosity of, A., I, 174. a-Ethyl-β-cetylstilbene, 4:4'-dihydroxy-, and its dimethyl ether, A., II, 129.

Ethyl β' -chloroisobutyl ketone, β -chloro-, A., II, 323.

Ethylcolchiceine, A., II, 48.

3-Ethylcoumarin, 4-hydroxy-, A., II, 166.

2- and 3-Ethyl-p-cresol, p-nitrobenzoates of, A., II, 295.

4- and 6-Ethyl-m-cresol, p-nitrobenzoates of, A., II, 295.

ε-Ethyl-Δγ-decene, γ-nitro-, A., II, 247.

a-Ethyl-a-decyl-n-tetradecoic acid, and amide, A., II, 69.

a-Ethyldeoxybenzoin, p-nitro-, A., II, 44. 5-Ethyl-2:4-di-n-propyl-1:3-dioxan, 6-hydroxy-, 6-acetate, A., II, 233.

Ethylene, crystal structure of, A., I, 55. equilibrium of formation from, of ethyl alcohol, A., I, 62.

hydrogenation of, catalytic, catalysts for, A., I. 205.

molecules, excited states of, A., I, 264. photosensitised reactions of, A., I, 229. platinum complexes of, A., I, 112. reaction of, with caesium, A., II, 315.

thermodynamics of, A., I, 243.

Ethylene, trichloro-, anæsthesia with. See under Anæsthesia.

heat of vaporisation and vapour pressure of, A., I, 148.

tetrachloro-, photochemical chlorination and oxidation of, chlorine-sensitised, A., I, 132.

Ethylene dibromide, monosubstituted derivatives, reaction of, with potassium iodide, A., I, 226.

dichloride, absorption of, by wheat products, C., 129.

critical density and temperature data for, A., I, 8.

oxide, condensation of, with cyclic-β-ketoesters, A., II, 70. determination of, in wheat, C., 129.

sulphur dioxide compounds of, A., I, 16. disulphonate, treatment with, of allergic

children, A., III, 359. di-(β -3-phenyl-5and meso-Ethylene

hydantoinyl sulphides), A., II, 122.

Ethylene glycol, alkyl ethers of, vapours of, toxicity of, A., III, 362. compounds of, with metallic salts, A., II, 358.

Ethylene linkings, ozonolysis of, A., II, 318. semicyclic, A., II, 153.

 $\beta\beta'$ -Ethylened:aminobis(propenyl-3-pyridyl ketone), A., II, 377.

Ethylenebiguanide, constitution of, A., II, 325. Ethylenebisdiguanide, cobalt, copper, and nickel salts, A., I, 89.

Ethylene-a8-biscyclopentane-1:1'-dicarboxylic acid, and its derivatives, A., II, 193.

Ethylenediamine, conductivity of salts in, A., I, 129. derivatives of, with trypanocidal activity, A.,

II, 365; III, 830. reaction of, with Zeise's salts, A., II, 91. Ethylenediaminetetra-acetic acid, complex salts of, A., I, 45.

Ethylenedibiguanide, and its sulphate, A., II, 325.

NN'-Ethylenediglucamine, A., II, 38.

Ethylenedithiol, and its ethers, hydrogenolysis of, by Raney nickel catalyst, A., II, 179.

Ethyleneimine, hydrochloride, A., II, 249. polymerisation of, A., II, 249.

spectrum of, infra-red, and structure, A., II, 249.

Ethylenic compounds, aromatic, p-substituted, preparation of, A., II, 365.

N-Ethylethyleneimine, N- β -amino-, and its phenylthiocarbamato, A., II, 249.
9-Ethylfluorene-9-carboxylic acid, β -diethylaminoethyl ester, hydrochloride, A., II, 16.

Ethyltrifluorosilane, A., II, 383. Ethyl- β -D-galactofuranoside, oxidation of, A.,

II, 214. β-Ethylgentiobioside, β-β'β'β'-trichloro-, A., III,

384. β-Ethyl-D-glucoside, β-β'-trichloro-, tetraacetate,

in radishes, A., III, 87. Ethyl- α - and $-\beta$ -d-glucosides, β -nitro-, tetraacetates, A., II, 251.

e-Ethylheptane, γ -oximino-, A., II, 247. γ -Ethylheptane, β -ol, α -nitro-, A., II, 247. γ -Ethylheptane- δ -ol, γ -nitro-, A., II, 247. ϵ -Ethylheptane- δ -ol, γ -nitro-, A., II, 247. ϵ -Ethyl- Δ ?-heptene, γ -nitro-, A., II, 247. 4-Ethyl- Δ 2:5-cyclohexadienone, and its p-nitro-

phenylhydrazone, A., II, 195.

 δ -Ethylhexane, β -oximino-, A., II, 247.

2-Ethylcyclohexane, 1:2-dithiocyano-, A., II, 154. β -Ethylhexanol, toxicity of, for rats, A., III, 61. δ-Ethylhexan- γ -ol, β -amino-, and its benzoyl derivative, A., II, 152.

β-nitro-, A., II, 152, 247.

cis-1-Ethylcyclohexanol, 2-chloro-, A., II, 335. cis-2-Ethylcyclohexanol, a-naphthylurethane, A., II, 160.

3-Ethylcyclohexanol, and its a-naphthylurethane, A., II, 160.

4-Ethylcyclohexanol, a-naphthylurethane, A., II, 160.

4-Ethylcyclohexanol, 4-a-hvdroxy-, and di-3:5-dinitrobenzoate, A., II, 160.

δ-Ethyl-Δβ-hexene, β-nitro-, A., II, 247. Ethyl-ββ'β"-trihydroxy-tert.-butylamine, β-hydroxy-, hydrochloride, A., II, 323.

-Ethyl-N-β-hydroxyethyl-N'-ββ'β"trihydroxy-tert.-butylpropylene-ay-diamine, β-hydroxy-, dihydrochloride, A., II, 323. -Ethyl- β' -hydroxyethylpropionitrile, picrate,

A., II, 82. 9-y-Ethyl-\(\beta'\)-hydroxyethylpropylamino-2methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83.

 β -Ethylidene- α -allyl-n-valeronitrile, A., II, 47. 3:3'-Ethylidenebis-4-hydroxycoumarin, action of, as blood anticoagulant, A., III, 717.

dibenzoate, A., II, 344. bis-4-methyl ether, A., II, 167.

Ethylidenebutylamine, A., II, 183. Ethylideneglucosaccharic acid, derivatives of, A., II, 121.

Ethylideneyobyrine, A., II, 63. 8-Ethylmethyl-y-aminopropylamino-6-

methoxyquinoline, 8-β-hydroxy-, and its salts, A., II, 57.

5-Ethyl-5- β -methylbutyl-2:4-ditbiobarbituric acid, A., II, 203.

Ethylmorphine, hydrochloride, treatment with, of deafness, by injection into tympanum, A., III, 727.

2-Ethylnaphthalene, 1:3-dihydroxy-, and its diacetate, A., II, 130.

ε-Ethylnonane, γ-oximino-, A., II, 247.

e-Ethylnonan-y-one, A., II, 247. Ethylnorsuprarenin. See a-Phenylbutanol,

B-amino-a-3:4-dihydroxy-.

 δ -Ethyloctane, β -oximino-, A., II, 247. δ-Ethyloctan-y-ol, β -nitro-, A., II, 247.

e-Ethyloctan-δ-ol, γ-nitro-, A., II, 247. δ-Ethyl-Δβ-octene, γ-nitro-, A., II, 247.

ε-Ethyl-Δγ-octene, γ-nitro-, A., II, 247. γ-Ethyl-Aad-pentadiene-aε-dicarboxylic

acid, and its ethyl ester, A., II, 195.

y-Ethylpentane, $a\epsilon\gamma$ - β' -tricyano-, A., II, 33. Ethylcyclopentane, A., II, 153.

y-Ethylpentan-β-ol, α-nitro-, A., II, 152, 247. 1-Ethylcyclopentanol, p-nitro- and 3:5-dinitrobenzoates, A., II, 219.

1-Etbylcyclopentan-2-one-1-carboxylic ethyl ester, A., II, 154.

 β -Ethyl- $\Delta\beta$ -n-pentenonitrile, A., II, 47.

3'-Ethyl-1:2-cyclopentenophenanthrene, and its picrate, A., II, 11.

Ethylphenols, p-nitrobenzoates of, A., II, 294, 295.

2-4-Ethylphenol, and 3-bromoand p-nitrobenzoates 2:6 dibromo, 3:5-dibromo-, A., II, 43.

10-Ethylphenothiazine, metallation of, A., II, 353.

10-Ethylphenothiazine, 10-β-chloro-, 5-oxide, A., II, 353.

3-iodo-, A., II, 353.

3-nitro-, 5-oxide, A., II, 353.

10-Ethylphenothiazine-3-carboxylic acid, A., II,

10-Ethylphenothiazine-4-(or -2-)carboxylic acid, and its methyl ester, A., II, 353.

N-p-Ethylphenyl-N-ethylcarbamide, A., II, 255. N-2-Ethylphenyl-N-ethylcarbamide, 4-bromo-, A., II, 255.

N-4-Ethylphenyl-N-ethylcarbamide, 2-bromo-, A., II, 255.

Ethylphenylmethyl methyl ketone, semicarbazone, A., II, 334.

Ethylphthalimide, β -bromo-, synthesis of, A., II,

1-Ethylpiperazine dihydrochloride, A., II, 236. 1-Ethylpiperazine, 1-β-hydroxy-, benzoyl derivative, dihydrochloride, A., II, 236. dihydrochloride, A., II, 235.

4-Ethylpiperazine-1-carboxylamide,

4-β-hydroxy-, benzoyl hydrochloride, A., II, 236. derivative, hydrochloride, A., II, 236.

3-Ethyl-2-piperidone, A., II, 169.

3-Ethyl-2-piperidone-3-carboxylic acid, ethyl ester, A., II, 169.

Ethylisopropylacetic acid, anilide of, A., II, 211. Ethyl-n-propylamine hydrochloride, A., II, 183. 5-Ethyl-2-propyl-1:3-dioxan, 5-amino-, 5-nitro-, A., II, 23.

5-Ethyl-5-n-propyl-2:4-dithiobarbituric acid, A., A., II, 203.

5-Ethyl-5-isopropyl-2:4-dithiobarbituric acid. A., II, 203.

N-Ethylpropylene-ay-diamine, and its picrate, A., II, 291.

4-Ethyl-3-180propylcyclohexyl-n-propyl alcohol, A., II, 197.

9-Ethyl-10-n-propylphenanthrene, A., II, 42. 5-Ethyl-5-n-propyl-2:4:8-trithiobarbituric acid,

A., II, 203. 3-Ethylpyridine, 3-α-amino-, platinichloride and phenylthiocarbamide, A., II, 377.

2-Ethylpyrrolidinoacetic acid, 2-a-hydroxy-, and its betaine and their hydrochlorides, A., II, 87.

lactone, and its methiodide and picrate, A., II, 87.

3-Ethylquinoline ethiodide, A., II, 170. 2-Ethylresorcinol, diacetate, A., II, 191

 β -Ethylsuccindiamide, β -hydroxy-, A., II, 53. 3-Ethylsulphanilamido-2:3-dihydrothiazoline, A., II, 26.

7-Ethyl-1:2:3:4-tetrahydrophenanthrene, its picrate, A., II, 41.

1-Ethyl-1:2:3:4-tetrahydroquinoline, 1-β-cyano-, and its picrate, A., II, 291.

Ethylthiazolium salts, β -amino-, A., II, 313.

1-Ethylthiolaldehydo-D-galactose ethyl 1:2-orthoacetate tetraacetate, A., II, 292. p-Ethylthiolphenylarsonic acid, p-β-hydroxy-,

A., II, 283. Ethylyohimbine, adrenolytic and sympatholytic action of, A., III, 759.

Ethynylcarbinols, from octatrienal, A., II, 177. sorbaldehyde

Endalene, synthesis of, A., II, 329.

Endialytes, Lovozero, composition of, A., I, 24. Euflavine, bacteriostatic action of, A., III, 221. Eugenia jambolana, leaves, respiration of, A., III, 230, 231.

and 150-Eugenols, hydrogenation of, in presence of Raney nickel, A., II, 257.

Euglenarhodone, identity of, with astacene, A., III, 444.

Eunuchoids, optic function and ophthalmoscopic picture in, during treatment with orchic extract, A., III, 248.

treatment of, with methyltestosterone linguets, A., III, 254.

Eunuchoidism, gonadotropin exerction in, in man, A., III, 33.

male, effect on, of gonadotropin and sex hormones, A., III, 412. preadolescent, substitution therapy in,

personality changes after, A., III, 191. Euonymus velutina and verrucosa, bark, guttapercha in, A., III, 383.

Euphausia superba, larval maxillary glands of, A., III, 320.

Euphol, isolation of, from euphorbium, and its derivatives, A., II, 244.

Euphorbium resin, alcohols from, A., II, 244. a-Euphorbol, isolation of, from euphorbium, and its derivatives, A., II, 244.

Europium, isolation of, A., I, 44. spectrum of, K absorption, A., I, 185.

Europium sulphate, magnetic susceptibility of,

A., I, 121. spectrum of, A., I, 113. Zeeman effect in, A., I, 137.

Eurygaster integriceps, wheat injury by, A., III,

Eustachian tube, anatomy of, A., III, 105, 586. function of, A., III, 105. stenosis of, A., III, 805.

Eusthenopteron, hyomandibular of, A., III, 26. Eustrongylides, larvæ, metabolism of, effect of pH, salts, and temperature on, A., III, 274.

Evans-blue, determination of, in blood-plasma and -serum, chromatographically, C., 175. in blood-serum, spectrophotometrically, C 28

See also T-1824.

Evaporation, from liquid surfaces into air streams, A., I, 101.

Evipan, sodium, anæsthesia with. See under Anæsthesia.

Ewes, cestrus and ovulation induction in, during ancestrous season, A., III, 408.

range, blood-phosphorus level in, A., III, 575.

Exercise. See Muscular exercise.

Exophthalmos, induced by pituitary extracts in guinea-pigs, orbital fat and water content in, A., III, 647.

progressive, in toxic disease of thyroid, A., III, 648.

Exostosis, benign, multiple, malignant degeneration in, A., III, 821.

multiple, hereditary, A., III, 234. Exotropia, concomitant, followed by transient

esotropia, associated with migraine, A., III, 333.

Expectorants, carbon dioxide as, by inhalation, A., III, 176.

paregorie, A., III, 494.

Explosions, closed-vessel, flame temperatures in, photographic determination of, C., 100. effect of, on acoustic apparatus, A., III, 25.

gaseous, chain reactions and, A., I, 285. propagation of, A., I, 251.

temperature gradients in, A., I, 285. theory of, A., I, 64.

with degenerate branching, A., I, 252.

Explosives, liquid and solid, detonation of, hydrodynamic-thermodynamic theory of, A., I, 107.

Extension, calculation of, in bursting tests, C., 146.

Extraction apparatus, laboratory, C., 206. glass, design of, C., 95. with heavy organic solvents, C., 206. liquid-liquid, C., 95, 206. micro-, C., 53.

Soxhlet-type, C., 53. Extrapolation, C., 198. Extremities, closed injuries to, embolism and thrombosis after, A., III, 11. skin temperatures of, of persons with vitamin-

B complex deficiencies, A., III, 751.

upper, importance of thoracic ganglion for sympathic supply of, A., III, 582.
vascular stasis of, thrombocyte deficit in, A., III, 165.

See also Feet, Fingers, and Hands.

Exudates, Ziehl-Gram staining method for, A., Eyes, accommodation of, fatigue of, A., III, 530.

spasm of, A., III, 334. adaptation of, dark, effect of age on, A., III, 650.

effect of hue on, A., III, 463.

red goggles for producing, A., III, 405. testing of, A., III, 336.

vitamin A requirement in relation to, in man, A., III, 601.

anthropology of, A., III, 181. aqueous humour of, formation and reabsorption of, dynamic factors in, A., III, 803. as image-forming mechanism, A., III, 181. astigmatism in, binocular refraction with cross

cylinder technique in, A., III, 460. atrophy of, diagnosis and treatment of, A., III, 463.

binocular focussing of, on repeating pattern, A., III, 104.

ciliary body of, oxidative enzyme distribution in, A., III, 461. circle of Willis of, rupture of aneurysm of, A.,

III, 184.

conditioning and discrimination in, mathematical biophysics of, A., III, 23. conjunctiva of, folliculation of. See Trachoma. cornea of, A., III, 650.

acid-base tolerance of, A., III, 583.

dystrophy of, Groenouw's, A., III, 334. hereditary, A., III, 334. epithelium of, mitotic activity of, effect of

drugs on, A., III, 334. regeneration of, effect of anæsthetics on,

A., III, 403.

metabolism of, A., III, 583. opacities of, congenital, A., III, 530.

pigment line in, A., III, 584. transplantation of, histology of, A., III, 650.

ulcers of. See under Ulcers vascularisation of, A., III, 182.

effect of riboflavin on, in R.C.A.F. personnel, A., III, 247.

in nutritional deficiency, A., III, 404. wounds of, healing of, effect of variables on epithelial movements in, A., III, 584. corneal implant in, dystrophy of, A., III,

334. development of, A., III, 519.

distribution of penicillin in, A., III, 803. effect on, of methyl alcohol poisoning, A., III,

of testosterone propionate, in feminded male castrates, A., III, 332.

epithelial regeneration in, A., III, 182. examination of, for preparatory-school boys, A., III, 181.

fatigue of, effect of riboflavin on, in R.C.A.F. personnel, A., III, 247.

flicker fusion test of, as measure of fatigue in aviators, A., III, 804.

fovca, spectral sensitivity of, in Purkinje

range, A., III, 25. function of, and ophthalmoscopic picture in eunuchoids during treatment with orchic

extract, A., III, 248. evaluation of, A., III, 802. human, history of, A., III, 181.

indicator-yellow in, A., III, 104. industrial health problems of, A., III, 23.

infections of, diagnosis of, laboratory aids in. in tropical and subtropical countries, A., III, 801.

intraocular fluid of, dynamics of, secretiondiffusion theory of, A., III, 584. intraocular pressure in, and its relation to

retinal extravasation, A., III. 803.

Eyes, iris of, atrophy of, essential, A., III, pigment freckles of, in relation to uveal melanoma, A., III, 530. lens of, cataractous, sugar content of, in man, A., III, 726, dislocated, cataractous, early operation on, A., III, 335. ectopic, familial, A., III, 803. pathologic changes of, associated with nontraumatic iritis, A., III, 404. lesions of, mustard gas, in men and rabbits, A., III, 334. streptococcal, in rabbits, treatment of, A., III, 848. macula, split, A., III, 463. movements of, in relation to vascular changes in labyrinth fistulas, A., III, 249. muscles, external recti, paralysis of, treated by muscle transplantation, A., III, 461. extrinsic and intrinsic, effect of electric currents on, A., III, 802. myopic, pathologic anatomy of, A., III, 248. pathology of, in New Zealand forces, in relation to the optician, A., III, 332. pupil of, abnormalities in, diagnosis of, A., III, 530. reflex of, to darkness, A, III, 334. to light, effect of alcohol on, in man, A., 1II, 530. rigidity of, causes of, A., III, 103. Stiles-Crawford effect in, A., III, 726. rabbit's, iris innervation of, in relation to function and pupillary abnormalities in man, A., III, 530. reaction of, to horse-serum, A., III, 24. radiology and, A., III, 248. refraction of, ophthalmology and, A., III, 332. sensitometric method of, A., III, 333. refractive problems in, A., III, 529. retina of, action potential of, A., III, 24. angeoid streaks of, A., III, 462. angiospasm in, evaluation of, A., III, 803. burns of, from solar eclipse, A., III, 183. choline-esterase distribution in, in bovines, A., 111, 404. degeneration of, associated with ophthalmoplegia, A., III, 726. diphosphopyridine nucleotide distribution in, in bovines, A., III, 404. excitation in, compared with unstriated muscle, A., III, 651. flicker response contour of, in man, in relation to avian pecten, A., III, 405. ganglion cells of, pigmentary changes in, A., III, 183. glioma of, rosettes, nature, and nomenclature of, A., III, 804. macular sparing in, A., III, 248. of North American teleosts, with reference to their tapeta lucida, A., III, 804. peripheral holes in, without detachment, A., III, 336. pigment and visual cells of, effect of darkness and temperature on, transferred to abdominal cavity, A., III, 337. pigmentary degeneration of, nerve-deafness in, A., III, 183. size of cellular elements of, in relation to volume of globe in birds, A., III, 585. tumour of, A., III, 651. visual purple of, chemistry of, A., III, 336. retina and visual field of, histopathology of, in methyl alcohol poisoning, A., III, 183. riboflavin deficiency in, in dogs, A., III, 103. signs of, A., III, 404. sclera, dermoid tumour of, A., III, 403.

meridonal size lenses on, A., III, 336.

treatment of, A., III, 529.

tests for, cross cylinder, A., III, 529.

testing of, charts for, A., III, 531.

583.

slant, and ptosis associated with adactyly, brachyphalangv, and syndactly, A., III, spatial localisation by, effect of wearing strain of, monocular occlusion for, A., III,

INDEX OF SUBJECTS. Eyes, tissues of, cultivated in vitro, A., III, 389. fat and water content of, in relation to exophthalmos production in guinea-pigs, A., III, 247. toxic effects on, of sulphonamides, A., III, 23. treatment of, vitamins in, A., III, 582. tuberculous, A., III, 649. twins', unusual findings in, A., III, 648. uvea of, melanoma of, prognosis and reticulin content of, A., III, 335. visual pathway in, architecture of, in man, A., IÎI, 651. vitreous humour of, biomicroscopic examination of, A., III, 335. worm in, in man, A., III, 103. See also Astigmatism, Mydriasis, Myopia, Nystagmus, Opthalmology, Optics, Squint, Vision, etc. diseases, inflammatory and neoplastic, treatment of, with X-rays, A., III, 338. treatment of, with penicillin, A., III, 649. See also Cataract, Conjunctivitis, Glaucoma, Eye shadows, analysis of, C., 37. Eyebrow pencils, analysis of, C., 37. Eyelids, coloboma of, congenital, bilateral, A., III, 181. F. F929, effect of, on gastric secretion in dogs, A., III, 656. on pain threshold, A., III, 59. F1571, effect of, on gastric secretion in dogs, A., III, 656. Fabrics, friction coefficient of, friction meter for determining, C., 71. waterproof, water-vapour permeability of, C., Face, deformities of, use of acrylic and elastic resin prostheses for, A., III, 415. Fæces, aerogenes bacilli in, A., III, 222. determination in, of fatty acids and neutral fat and sterol fractions, C., 29. fat in, microscopy of, C., 177. human, Eijkman tests on coliform organisms from, A., III, 298. infants', frequency of, effect of dietary changes on, A., III, 114. pathogenic bacteria isolated from, A., III, 298. pathogenic staphylococci from, A., III, 563. Fagus silvatica, lignin of, A., III, 516.
"Falling disease" of cattle, A., III, 352. Fallopian tube, cancer of, A., III, 669. decidual reactions in, A., III, 189. inflation of, therapeutic value of, A., III, 32. mucosa of, endometrium-like, A., III, 466. reception of ovum by, A., III, 29. Fat or Fats, absorption of, lipolysis and, A., III,

474.

analysis of, spectrometric, C., 180. animal and plant, oxidation of, effect of β -carotene and α -tocopherol in, A., III, 753. animal and vegetable, determination in, of tocopherol, C., 85. antioxidant for, C., 81.

autoxidised, determination in, of active oxygen, C., 121. biological, separation of, from mixtures by adsorption, A., III, 39.

colour of, measurement of, C., 73. commercial, analysis of, C., 171.

depot, chemistry of, in chickens and turkeys, A., III, 415.

human, component fatty acids of, A., III, determination of, in fatty foods, C., 130.

dietary, oxidation of, A., III, 130. digestibility of, effect of protein in diet on, A., III, 419.

dynamic effect of, in relation to carbohydrate and protein, A., III, 676. hydrolysis of, by bacteria, measured with basic dyes, A., III, 434.

metabolism of. See under Metabolism.

Fat or Fats, natural, detection in, of squalene, A., III, 348. oxidation of, C., 121.

nutritional, intravenously administered, A.,

nutritive value of, A., III, 419, 601, 671. effect of flavour on, A., III, 601.

packaging of, in glass, C., 81. plastic vegetable, consistency of, C., 121.

rancidity of, C., 81. chlorophyll test for, C., 122. softening point of, C., 131. spoilage of, A., III, 765.

stability of, Swift test for, C., 25. staining of, by Sudan dyes, A., III, 713.

in isopropanol, A., III, 93, 713. stored, from fat diets, mobilisation of, in

relation to adrenalectomy, A., III, 407. subcutaneous, tumefaction of, after insulin injection, A., III, 652.

tumour-promoting action of, A., III, 478. unsaturated, oxidised, similarity of acid-fast pigment to, A., III, 490.

vegetable, heats of fusion of, C., 202.

vitamin-A activity of, from cattle fed carotene, A., III, 267.

Fatigue-testing machine, C., 112. Feeder, for guinea-pigs, C., 93.

Feeding, communal, problems of, A., III, 823. See also Canteens, Catering, etc.

Feeding-stuffs, analysis of, C., 132.

cereal, cooked, determination in, of fat, C., 30. conversion of, into human food, by animals, A., III, 482.

determination in, of cellulose, fibre, hemicellulose, and lignin, C., 133.

of fibre, froth dispersion in, C., 132. of iron, C., 132.

of phosphorus, C., 181.

digestibility and metabolisable energy of, for cattle, A., III, 356, 545.

dog's, determination in, of fat, C., 30.

fine-ground, determination in, of sodium chloride, C., 32. New Zealand, metabolism trials with, C., 133.

stock, determination in, of calcium, phosphorus, and iron, C., 32. See also Foods.

Feet, children's, A., III, 1. immersion. See Immersion foot. malformation of, hereditary, A., III, 517.

Felspar, commercial, characteristics of, C., 62. Femurs, endosteal bone deposition in, in vitamin-D-deficient mice treated with cestrogen, A., III, 386.

growth pattern and rate of, in rats, A., III, 317. head and neck of, increased blood supply to, A., III, 626.

measurements on, in man, A., III, 2. phosphatase content of, effect of insulin, gonadotropic and thyrotropic hormones, and pituitary growth substance on, in rats, A., 111, 29.

upper end of, architecture of, in pathological

conditions, A., III, 710. Fermentation, Aeromonas, A., III, 616. alcoholic, yeast. See under Yeast.

butyrie, A., III, 506.

citric, by lactobacilli and streptococci, A., III,

co-enzyme system of, A., III, 432.

lactic, by streptococci, A., III, 771.
Ferric chloride. See under Iron.

oxide. See under Iron,

Ferricyanides, determination of, by electrometric titration, C., 15. in presence of ferrocyanides, C., 162.

Ferrihaem, detection of, colour reaction for, A., III, 323; C., 70.

Ferrites. See under Iron. Ferritin, A., I, 5; III, 130.

ultracentrifuging of, A., II, 208. apoFerritin, X-ray structure of, A., I, 5.

ultracentrifuging of, A., II, 208. Ferrocyanides, determination of, by electro-

metric titration, C., 15. titration of, with permanganate in bloodsugar determination, C., 27.

Ferroferriphosphates. See under Iron.

Ferrohæmoglobin, ionic strength valency of, A.,

compounds, polycrystalline, Ferromagnetic hysteresis of, in weak magnetic fields, A., I, 271.

hysteresis and magnetisation of, A., I, 6. materials, cavitation of, apparatus for testing, C., 104.

mirrors. See under Mirrors.

Ferromanganese, c., 13. determination of. in.

Ferropickeringite, A., I, 294.

Ferrosilicon, determination in, of silicon, C., 157.

Ferrous salts. See under Iron.

Ferrous-2:2'-dipyridyl, oxidation potential of, A., I, 40.

Ferrous-o-phenanthroline, oxidation potential of, A., I, 40.

Ferrovanadium, determination in, of iron, C., 14. of phosphorus, C., 63, 159.

Fertilisers, action of, effect of soil on, A., III, 309.

determination in, of acid- and base-forming quality, C., 139. of potassium, C., 40.

hygroscopicity of, C., 188.

mixed, determination in, of potassium, C., 188

phosphatic, solvent action on, of citric acid saturated with calcium citrate, C., 188. potassium, effect of, on production of organic

matter, A., III, 309. Fertility, dietary requirements for, A., III, 47.

effect on, of fats in rats, A., III, 671. in sheep, A., III, 189.

Ferula pyramidata, sesquiterpene alcohol from, A., II, 198.

Fever, artificial, treatment with, A., III, 54. collapse in, relations of plasma dehydration and overhydration to, A., III, 11. effect of, on pregnancy, A., III, 817. See also Pyrexia.

blackwater. See Blackwater fever. cerebrospinal. See Cerebrospinal fever.

See Drug fever. glandular. See Glandular fever.

hay. See Hay fever.

induced by malaria and typhoid vaccine, electroencephalographs in, in cases of neurosyphilis, A., III, 724. Oroya. See Oroya fever.

production of, with inflammation, A., III,

protein content of extracellular fluid in, A., III, 525.

psychogenic, in infants, A., III, 582.

rat-bite. See Rat-bite fever.

relapsing, diagnosis of, serologically, A., III, 5Ô4. rheumatic. See Rheumatic fever.

sandfly. See Sandfly fever.

scarlet. See Scarlet fever.

spotted. See Meningitis, cerebrospinal. yellow. See Yellow fever.

Fibres, genesis of, A., I, 84.

molecules, double refraction of, in electric fields, A., I, 166. textile, finished, staining of, C., 120.

Fibrin, clots, A., III, 795. films, A., III, 795.

absorption rates of, in tissue, A., III, 795. in neurosurgery, A., III, 796.

foam, as hæmostatic agent and for use with thrombin, A., III, 795.

human, as dressing for burns, A., III, 10. network of, miscroscopy of, in different species, A., III, 10.

Fibrinogen, human, for nerve repair, A., III, 800.

plastics, A., III, 795.

reaction of, with fibrolysin, A., III, 767. use of, in surface treatment of burns, A., III, 795.

Fibroadenoma, incidence of, in Albany strain of rats, A., III, 746.

lung. See under Lungs.

Fibroblasts, growth of, in tissue culture, effect of chlorophyll derivatives on, A., III, 521. lethal effect of X-rays on, A., III, 137.

malignant and normal, nucleolar vacuoles in, A., III, 350.

Fibroblastoma, arachnoidal, with metastases to liver, A., III, 669.

Fibroids, abdominal, a-cestradiol-induced, treatment of, with progesterone, A., III, 542.

in hypophysectomised female guinea-pigs, A., III, 119.

induction of, with æstrogen in castrated monkey, A., III, 343.

uterine, a-cestradiol-induced, treatment of, with progesterone, A., III, 542.

Fibroin, coloured metallic complexes of, A., II,

Fibrolysin, reaction of, with fibrinogen, A., III, 767.

Fibroma, ovarian. See under Ovaries.

virus-induced, effect of X-rays on cell-virus associations in, in rabbits, A., III, 121. Fibromyoma, calcified, A., III, 822.

Fibromyoma angiomatosum of uterus, A., III, 669.

Fibrosarcoma, methylcholanthrene, effect on, of lowered body temperature, A., III, 541. transplantable, sarcoma-producing

extractable from, in rats, A., III, 543. Fibrosis, pancreatic. See under Pancreas.

Fibrositis, treatment of, with tocopherols, A., III, 301.

Ficin, activation of, A., III, 690.

Fievre boutonneuse, differentiation of, from Rocky Mountain spotted fever, A., III, 621.

Filariasis, treatment of, with neostam and neostibosan, in cotton rat, A., III, 758. Filariasis bancrofti, diagnosis of, with antigen

from Litomosoides carinii, A., III, 702. Films, anodic, chemistry and structure of, A., I,

40, 42. gas-permeability of, apparatus for measuring, C., 73, 95.

on glass, C., 47.

on solid surfaces, A., I, 222.

optical, evaporation of, vacuum chamber for, C., 202.

surface, pressure-area relations of, equations for, A., I, 151, 152.

thickness measurement of, C., 198.

Filters, Borndel, C., 53.

colour. See Colour filters. fritted, assembly for, C., 206.

manganese, for iron $K\beta$ rays, C., 44. nylon, for blood and plasma, C., 54.

pyrex glass, use of, in bacteriology, A., III, 71.

sintered, plastic, C., 54.

Filter bodies, porous, glass-particle, (P.), C., 53. Filter pads, bacteriological, growth-promoting substances from, A., III, 144.

Filter paper. See under Paper. Filtration, crucibles for, Selas, washing of, C., 205.

vacuum, renewing filter-cake surface in, C., 206.

Fins, function of, in teleosts, A., III, 317.

Fingers, tips, vascular bed volume of, in relation to emotion, A., III, 327.

Finger nails. See under Nails.

ir trees, Douglas, cuttings, rooting of, stimulated by growth substances, A., III, 156. Fir trees. Firebrats, use of methyl bromide against, C.

Fireflies, luminescence of, control of, A., III, 260_{-}

Firelighters, determination in, of naphthalene, C., 118.

Fischer reagent, use of, in analysis, C., 167. Fish, Black Sea, sensitivity threshold to currents of, A., III, 246.

cutaneous melanophore eruptions in, before melanotic tumour formation, A., III, 237. development of, effect of thiourea on, A., III, 729.

effect on, of softened water, A., III, 745. marine, acclimatisation of, to temperature, A., III, 259.

Fish, melanin content of, A., III, 259. plant poisons for, A., III, 708.

research on, genera, species, and subspecies determined by, A., III, 517.

thiamin inactivation by tissues of, A., III,

tissues, extraction of oil samples from, C., 30.

Fish-liver oils, adsorption from, of vitamin-A, A., III, 125.

determination in, of vitamin-A, A., III, 353; C., 83.

Indian, vitamin-A content of, A., III, 546. Fish oils, A., III, 128.

Fish products, nutritive value of, A., III, 264. South African, C., 30.

Fish skins, blue fluorescent substance of. See Ichthyopterin.

Fitness, physical, in adolescents, A., III, 282. Fixation, effect on, of metal salts and other chemicals, A., III, 93.

Fixing fluid for colour preservation in tissues, C., 76.

Flame, chemiluminescence of, A., I, 251. experiments with, in tubes, A., I, 32.

gases in, temperature of, A., I, 285.

hydroxyl in, A., I, 19.

in closed-vessel explosions, temperatures of, photographic determination of, C., 100. pressure decrease in blue cone of, A., I, 251.

Flasks, Kjeldahl, support for, C., 206. support for, on steam- and water-baths, C.,

206. Flavacidin, preparation and properties of, A.,

III, 559. Flavanones, glucosides of, synthesis of, under

physiological conditions, A., II, 252. Flavanone-7- β -d-glucoside, 3:7-dihydroxy-, A., II, 252. 3-hydroxy-,

Flavylium chloride, 3:5:4'-tri-, 3:5:3':4'-tetra-, and 3:5:3':4':5'-pentahydroxy-, A., II, 232.

salts, 5-hydroxy-, and their methyl ethers, A., II, 232

Flax, A., III, 377.

Flax plants, Bison, mineral nutrition of, A., III,

tetraploidy in, A., III, 381.

Flax seed, equilibrium hygroscopicity of, A., III, 377.

respiration of, A., III, 376. Fleas. See Malarœus telchinum.

beach-. See Talorchestia megalophthalma.

Flies, deer, desensitisation to, A., III, 306. detection in, of poliomyelitis virus during epidemics, A., III, 78.

horn-, larvæ, development of, in manure, internal treatment of animals with phenothiazine for prevention of, A., III, 494.

house-, nervous system of, histological effect of pyrethrum on, A., III, 261. testing of aerosols against, C., 38.

See also Musca domestica. larvæ, bactericidal properties of, A., III,

tsetse, repellents for, in veterinary science, A., III, 137.

Flint, commercial, characteristics of, C., 62.

Flocculation, apparatus for reading of reactions in, C., 194. Flotation with 8-hydroxyquinoline as collector,

A., I, 83. Flounders, British Columbia, quality testing of,

C., 180.

Flour, bread-producing properties of, C., 179. darkening of, in bread-making, C., 179. determination in, of aneurin, C., 80.

of thiamin, C., 129.

of vitamin- B_1 , C., 32. high-extraction, nutritional value of, A., III, 670.

national, determination in, of added calcium carbonate, C., 80.

refined, determination in, of thiol groups, C., 129.

strength determination of, C., 179.

white, enriched, A., III, 268.

Flow, measurement of, basic solutions for, C., 197.

Flowers, emasculated, covering of, in plant breeding, A., III, 88. petals and stamens of, oil and phosphatide content of, A., III, 624. pigments and triterpenes from, A., III, 624. rooting of, in sterile culture, A., III, 308. Flowmeters, positive displacement, C., 206. Fluctuations, theory of, A., I, 79. Fluids, extracellular, protein content of, in anoxemia, cardiac failure, fever, and venous congestion, A., III, 525. oxtravascular, blood and, exchange rate of substances between, A., III, 576. high-viscosity, flow properties of, determination of, with penetrometer, C., 56. viscosity of, apparatus for measuring, (P.), C., 94. Fluidity of electrolytes, A., I, 57. Fluoaluminates. See under Aluminium. 2-(12'-Fluoranthyl)cinchonic acid, A., II, 379. 2-(12'-Fluoranthyl)quinoline, and its picrate, A., II, 379. Fluorene, 2-amino-, acetyl derivative, tumours induced by, A., III, 416, 807. tumours induced by, A., III, 416. Fluorene-9-aldehyde, 2:7-dibromo-, derivatives of, A., II, 261. 2:7:9-tribromo-, A., II, 261. 2-Fluoreneazocresols, A., II, 45. 2-Fluoreneazoguaiscol, A., II, 45. 2-Fluoreneazo-orcinol, A., II, 45. 2-Fluoreneazophenol, A., II, 45. 2-Fluoreneazophloroglucinol, A., II, 45. 2-Fluoreneazopyrocatechol, A., II, 45. 2-Fluoreneazopyrogallol, A., II, 45. 2-Fluoreneazoresorcinol, A., II, 45. 2-Fluoreneazothymol, A., II, 45. 2-Fluoreneazo-m-4-xylenol, A., II, 45. Fluorescein, as aid in gastroscopy, A., III, 412. spectrum of, absorption, A., I, 96. luorescein, halogeno-derivatives, Fluorescein, determination in, of halogens, C., 23. Fluorescence, cross-prism investigation of, C., 200. in analysis, C., 70. intensity of, in relation to composition of solution, A., I, 141. in relation to concentration, C., 149. of carcinogenic hydrocarbons, A., I, 28. of hydrocarbons, effect of naphthacene on, A., I, 28. of organic molecules, A., I, 266. of solutions, effect of concentration on, A., I, in relation to wave-length of light, A., I, Fluorides. See under Fluorine. Fluorimeters, for determination of alkaloids and vitamins, calibration of, C., 99. for vitamin- B_1 , determination, C., 32. photo-electric, construction and use of, C., 149. Fluorimetry, C., 149. Fluorine in coal, C., 161. introduction of, into organic compounds, A., II, 1. poisoning by. See under Poisoning. a-ray distribution from, A., I. 139. Fluorine compounds, dental health and, post-war implications of, A., III, 609. effect of, on dental caries, A., III, 2. in water supply, dental health in relation to, A., III, 420. non-toxic concentrations of, in prevention of deafness, A., III, 405. Hydrofluoric acid, catalytic action of. A., I, 41. chain association of, A., I. 268. detection and determination of, in air, C., 111. vapour, films formed by, on glass, A., I, 31; C., 47. viscosity of, A., I. 274. viscosimeter for measuring, C., 204. Fluorides, determination of, in natural water, C., 39. effect of ingestion of, on dental caries, A., III, 266.

Fluorine determination :determination of, in aluminium fluoride, C., in coal, C., 161. in foods, C., 181 in oranges, C., 91. spectroscopically, C., 12. volumetrically, C., 12. Fluorite, in deposits of Bashkir S.S.R., A., I, 24. S. Durham, A., I, 70. Fluorochrome, A., III, 53.
synthesis of, for vital staining, photochemically, A., II, 237. Fluorocyanine, blue pigment from Cyprinida scales, A., III, 745. vitamin- B_1 and - B_2 activity of, A., III, 752. Fluorosis, endemic, in South India, A., III, 485. on Tyneside, A., III, 198. Fluorspar, analysis of, and associated minerals, C., 6. deposits of, with barytes, Thomson Hill, Nelson, A., I, 257. determination in, of calcium fluoride, C., 59. luminescence of, A., I, 3. Flying. See Aviation.
Foams, formation of, in organic liquids, A., I, 246. identification of dyes in, C., I19. Foam time, measurements of, physiological applications of, A., III, 63. Fœtus, development and growth of, in man, A., II, 626. diameter of, and pelvis, X-ray estimate of, A., III, 317. effect on, of pentobarbital sodium and pentothal sodium, A., III, 280. gastrointestinal activity and swallowing in, in monkeys, A., III, 113. hæmolytic disease of. See Erythroblastosis footalis. malpresentation of, due to amyoplasia congenita, A., III, 446. maturity of, glomerular dev kidney as index of, A., III, 3. development in metabolic rate of, in rats, A., III, 273. phases in life of, A., III, 386. See also Embryos. Foils, penetration of, by high-energy electrons, A 1 233 Folic acid, A., II, 244. concentrates, value of, in diet of rats fed succinylsulphathiazole, A., III, 200. deficiency of, in rats fed succinylsuIpha-thiazole, A., III, 424. determination of, C., 34. use of Streptococcus lactis R for, C., 93. identification of, as dietary essential for guinea-pigs, A., III, 673. in relation to vitamin-M and xanthopterin, A., III, 355. production of, by rat liver in vitro, A., III, 474. rôle of, in nutrition of rhesus monkey, A., III, 126. in pantothenic acid utilisation by rats, A., ĤΙ, 47. tumour growth inhibition by, A., III, 598. Folliculin, synergism between, and vitamin-E,
A., III, 189. Foods, African, vitamins in, C., 183. analysis of, C., 82. as sources of vitamins, A., III, 352 bee, vitamin content of, A., III, 673. claims of animals and man for, A., III, 482. composition of, tables for, A., III, 600. consumption of, and dietary recommendations, A., III, 351. dehydrated, determination in. of sulphur dioxide, C., 132. determination in, of fluorine, C., 181. of leucine, C., 191. of riboflavin, C., 34. of selenium, C., 32. of tocopherol, C., 85. of vitamin-A., C., 83. of vitamin- B_8 , A., III, 354; C., 84, 134. of vitamin-C, C., 35. of vitamin-E, A., III, 273.

Foods, energy value of, in relation to available nutrients, A., III, 351. enriched, laboratory control of, C., 80. fatty, determination in, of fats, C., 130. fortification of, A., III, 351. fresh and manufactured, natural nutrients of, A., III, 417. fried, for children, A., III, 483. home-grown, use of, for milk production, A., III, 418. metallic contamination of, A., III, 352. odours of, allergy to, A., III, 851. of animal origin, A., III, 265. Peruvian, determination in, of thiamin hydrochloride, A., III, 126. poisoning by. See under Poisoning. riboflavin in, at R.A.F. stations, A., III, 673. standards of, and their implications, A., III, staple, improved quality of, A., III, 264. translation of standards into terms of, A., III, utilisation of, influence of previous diet on, A., III, 197. vitamins and, A., III, 198. vitamin-B content in, A., III, 269. vitamin-C in, apparent, A., III, 355. with alkaline balance, determination in, of ash, C., 82. See also Feeding-stuffs. Food industry, fluorescence analysis in, C., 132. Foot and mouth disease, virus, immune serum against, A., III, 564. size of, and its sedimentation constant, A., III, 701. Foramen ovale, valve of, functional structure of, and blood flow in man and mammals, A., III, Forbisen, treatment with, of typhus, A., III, 607. Forestry, mycorrhiza in, A., III, 383. Formaldehyde, condensation of, with o-cresol, A., II, 14. with phenol, A., I, 106. determination of, co compounds, C., 21. combined in organic in casein, C., 24. in presence of other aldehydes, polarographically, C., 166. polymerisation of, A., I, 248. reactions of, with casein, C., 24. with histidine, A., II, 379. with m-hydroxybenzoic acid, A., II, 221. with proteins, A., II, 356. thermochemistry of, and its derivatives, A., I, Formaldehydesulphoxylic acid, disodium salt, diaminodiphenylsulphone compound of. See Diasone. Formamide, elimination of carbon monoxide from, catalysts for, A., II, 70. reaction of, with arylacetonitriles, A., II, 349. Formic acid, calcium and sodium salts, preparation of, A., I, 182. catalytic oxidation of, A., I, 88. dissociation constant and pH titration curves of, A., I, 202. polymerides of, electron diffraction by, A., I 195. ultrasonic wave velocity in mixtures of, with water, A., I, 33. vapour, decomposition of, catalysed by copper powder, A., I, 180. Form-1-naphthalide, 3-nitro-, A., II, 127. Form-2-naphthalide, 4-nitro-, A., II, 127. Formyl groups, determination of, C., 69. 6-Formyl-∆2-dihydropyran, A., II, 198. y-Formyl-Δα-hexenoic acid, ethyl ester, and its p-nitrophenylhydrazone, A., II, 195. 6-Formylmesoisochlorine, dimethyl ester, A., II, 312. synthesis of, A., II, 312. 2-Formyl-2-methylcyclohexanone, synthesis of, A., II, 340. y-Formyl-Δa-nonenoic acid, ethyl ester, A., II. 195. 2-Formylcyclopentylideneacetic acid, ethyl ester, semicarbazone of, A., II, 75.

a-Formylphenylacetic acid, butyl and ethyl esters, ethylene ketals of, A., II, 34.

γ-Formylpyrroporphyrin, bromo-, methyl ester, A., II, 312.

γ-Formylpyrroporphyrin-6 methyl ether, methyl ester, A., II, 312.

2-Formyltetrahydropyran, A., II, 198. Fossil plants. See under Plants. Foundries, use of X-rays in, C., 112.

Foves. See under Eyes.

Fowls, feather weight of, effect of castration on, A., III, 254.

morphological changes in, after steroid overdosage, A., III, 253.

See also Chickens, Hens, etc. Fowl-pox, vaccine, antigenic properties of, A.,

III, 621. Fowler's solution, effect of, on respiration and glycolysis of tissues, A., III, 717.

Fractures. See under Bones, Pelvis, etc.

Freezing point, and isotonic concentration of aqueous solutions, graphic methods for calculating, A., III, 497.

determination of, cryometers for, C., 47. of liquids, apparatus for, (P.), C., 48. of adsorbed liquids, A., I, 245.

Friction, static, A., I, 119.

Friction coefficients, in solutions in relation to diffusion theory, A., I, 275.

ciction meter, for determining friction coefficient of fabrics, C., 71. Friction meter,

Friedel-Crafts reaction, nuclear acylations by, A., II, 296, 297.

chloride and gallium with aluminium chloride, A., II, 293.

enolFriedelandione, and its derivatives, A., II, 375.

Friedelin, and its derivatives, A., II, 375. dipole moment of, A., I, 142.

Friedelindicarboxylic acid, and its derivatives, A., II, 375.

Friedelinols, isomeric, dipole moments of, A., I, 142.

Fries reaction, with esters of 2:6-dichloro- and 2:6-dimethyl-phenol, A., II, 127.

Fritillaria raddeana, constituents of, A., II, 206.

Frog, clawed, South African. See Xenopus. Frostbite, treatment of, with nicotinamide, A., III. 62.

vascular changes in, A., III, 14.

Froth, dispersion of, apparatus for, C., 132. d-Fructopyranose, A., II, 38. Fructose, determination of, in worts, C., 79.

oxidation of, by brain in vitro, A., III, 550 1-phosphate, isolation of, from liver, A., III, 743. sweetness of, in relation to glucose and

sucrose, A., III, 464: d-Fructose, solutions of, fructofuranose in, at

equilibrium, A., II, 38.

8-D-Fructose, tetra-p-benzeneazobenzoate, A., II, 6.

keto-D-Fructose, 1-iodo-, Α., tetraacetate. II, 7.

Fructose anhydrides, A., II, 8.

Fructose-1:6-diphosphoric acid, A., II, 90. Fructose-6-phosphoric acid, A., II, 90.

Fruit or Fruits, concentrates, vitamin-P activity of, A., III, 676.

determination in, of phosphorus pentoxide, C., 31.

of polybasic acids, C., 33.

of potassium, C., 31. Indian, chemistry of. A., III, 316.

normal and parthenocarpic, A., III, 86. parthenocarpic, effect of growth substances on, A., III, 707.

pigments and triterpenes from, A., III, 624. tropical, A., III, 379.

Fruit juices, determination in, of pH, C., 50. Fruit products, ash of, determination in, of chlorine, C., 31.

determination in, of phosphorus pentoxide, C., 31.

of polybasic acids, C., 33. of potassium, C., 31. vitamin-P activity of, A., III, 676. Fruticicola lantzi, dextro-voluted and lævovoluted forms of, amino-acids from leg proteins of, A., III, 39.

l-Fucobenziminazole, and its derivatives, A., II, 37.

l-Fucose, identification of, A., II, 37. 1-Fucose dibenzylmercaptal, A., II, 153. Fucus vesiculosus, l-fucose from, A., II, 153.

Fuel, gaseous, micro-analysis of, C., 115. liquid, analysis of, by infra-red absorption spectra, C., 68.

motor, boiling and heat content curves for, C., 17.

colour measurements of, C., 18.

knock-rating of, C., 165.

oil, detection in, of water, (P.), C., 197. petroleum, calorific value of, diagrams for, C., 18.

solid, analysis of, microchemically, C., 115. Fulminic acid, mercury salt, detonation of, under pressure, A., I, 68.

soap solution as reagent for, C., 38.

Fumarase, distribution of, in plant tissues, A., III, 232. preparation and stability of, A., III, 286.

Fumardianilide, NN'-dinitroso-, A., II, 120. Fumaric acid, cyanomethyl ester, A., II, 214.

dilauryl ester, films, A., I, 279. salts, spectra of, absorption, infra-red, A., I, 265.

Fumaric acid, chloro-, diethyl ester, condensation of, with ethyl methylacetoacetate, A., II, 17.

Fumigacin, isolation of, from culture filtrates of Aspergillus fumigatus, A., II, 208.

methyl ester, and its oxime and semicarbazone, A., II, 208. Fumigants, determination of, C., 129, 138, 186.

testing of, C., 87. See 4-Methoxy-2:5-toluquinone, Fumigatin.

3-hydroxy-.

Funaria hygrometrica, development of, pH of substrate in relation to, A., III, 513. Fundulus heteroclitus, use of, in analysis of

marihuana, C., 137. vertebræ in, form and number of, A., III, 518.

Fungi, antibiosis between bacteria and, A., III, 291.

antibiotic, distribution of, in nature, A., III, 291.

biochemistry of, A., II, 49.

cultures of, tube, preservation of, with liquid paraffin, A., III, 843.

edible, proteins of, nutritive value of, A., III, 484, 823.

effect on, of chemicals and dyes, A., III, 559. growth of, effect on, of biotin and pimelic acid, A., III, 70.

of cocarboxylase and thiamin, A., III, 290.

restriction of, in soil counts, A., III, 770. thiamin for, A., III, 141. lignin-like complexes synthesised by, A., III,

559. marine, biology and taxonomy of, A., III,

501. mould, in respiratory allergic diseases, A., III, 305.

pathogenic, isolation and identification of, A., III, 501.

poisonous, Australian, A., III, 316. soil. See under Soils.

synthesis by, of auxithals, A., III, 69. thermogenesis of, effect of nitrogen compounds

on, A., III, 289. vacuoles in plastids of, A., III, 705. wood-rotting, biochemistry of, A., III, 692.

Fungicides, activity of, testing of, A., III, 559. cotton hose as vehicle for, in treatment of

athlete's foot, A., III, 831. from moulds, A., III, 219. Funnels, constant dropping, C., 206. for filling capillaries with solids, C., 206.

for use with taper flasks, C., 206. weighing, C., 145. Furs, dyed, dusts from, skin sensitivity to, A.,

Furancarboxylic acids, from glucose, A., II, 53.

Furan-2:3:5-tricarboxylic acid, trimethyl ester, A., II, 54.

Furancia compounds, additive compounds of, with organo-magnesium compounds, A., II, 110.

duraldehyde, Cannizzaro reaction with benzaldchyde and, A., II, 375. Furfuraldehyde,

derivatives of, and their physico-chemical constants, A., II, 80. determination of, C., 169, 192.

Furfuryl alcohol, esters, of fatty acids, iodine

values of, C., 169. 8-y-Furfurylaminopropylamino-6-methoxy-

quinoline, and its salts, A., II, 57. Furfurylidene-3-methoxyacetophenone, and its 2:4-dinitrophenylhydrazone, A., II, 18. Furiuryltrimethylammonium iodide, effect of, on

polycythæmia, A., III, 96. treatment with, of urinary retention due to

bladder atony, A., III, 279. Furmethide. See Furfuryltrimethylammonium

iodide. Furnaces, bomb, for Carius digestion, C., 202.

electric, arc, laboratory, C., 48. cryptol, for crucibles, C., 49. Mars, C., 49.

for determination of carbon in metals, C., 49. for determination of carbon and sulphur, C.,

induction, melting, laboratory, C., 202.

quenching, for small specimens, C., 145. 4'-2-Furoamidodiphenylsulphone, 4-amino-,

4-acetyl derivative, A., II, 131. Furo-coumarones, A., II, 200.

Furoic acid, furfuryl ester, preparation of, from furfuraldehyde, by condensation, A., II, 344. 4'-(2-Furoyl)amidodiphenylsulphone, 4-amino-,

4-acetyl derivative of, II, 131. N4-Furoylsulphathiazole, A., II, 26.

Furunculosis, induced in fish, blood picture in, A., III, 524.

a-2-Furylacetic acid, a-amino-, A., II, 161. β -2-Furylacrylidenemalonic acid, A., II, 165.

δ-2-Furyl-n-amyl alcohol, a-naphthylurethane of, A., II, 165.

5-Furylhydantoin, A., II, 161.

δ-2-Furyl-n-valeric acid, and its anilide, A., II,

Fusarium, dehydrogenation by, with sulphur as hydrogen acceptor, A., III, 368. lysis in, A., III, 69.

Fusarium avenaceum, growth of, effect of biotin on, A., III, 367.

Fusarium culmorum, inoculation with, and Helminthosporium sativum, of wheat, A., III, 783.

Fusarium lini, enzymes of, hydrolysis by, of dl-alanine, A., III, 141. growth of, in soils, A., III, 290.

Fuses, safety, melting time of, A., I, 80.

Gadolinium, spectrum of, A., I, 137.

4-β-D-Galactopyranosido-D-glucosan, A., II, 38. Galactose, absorption of, by renal tubules in dogs, A., III, 816.

effect of pyridoxine, riboflavin, and thiamin deficiency on, by rat intestines, A., III, 199.

assimilation of, in liver, A., III, 193. poisoning by. See under Poisoning.

d-Galactose, determination of, by selective fermentation, C., 90.

and \$\beta-D-Galactoses, penta-p-benzeneazobenzoates, A., II, 6.

d-Galactose-p-tolylamine, A., II, 73.

Galacturonic acid, salts, and their use in preparation of galacturonic acid from pectic substances, A., II, 321.

D-Galacturonic acid, calcium sodium salt, A., II, 212.

keto-D-Galaheptulose, l-bromo-, 1-chloro-. 1-iodo-, and 1:1-diiodo-, derivatives of, A.,

Galena, leaching of, at Broken Hill, A., I, 160.

240 Galls, crown, formation of, on plants, A., III, Gall-bladder, diverticulum of, A., III, 257. epithelium of, growth and changes in, A., III, 116. normal appearing, A., III, 475. Gall-bladder disease, electrocardiograms in, A., 111, 525. liver involvement in, A., III, 36. thyroid function as factor in, and formation of gall-stones, A., III, 816. Gall-stones, pregnancy and, A., III, 816. See also Calculi. Galleopsis, chromosome doubling in, induced by colchicine, A., III, 381. Galleria mellonella, Malpighian tubes of, arsenic exerction by, A., III, 540. Gallium, isotope, radioactive, γ-rays from, energy of, A., I, I. Gallium alloys, with calcium, with cerium, and with lanthanum, A., I, 239. Gallium alums, crystal structure of, A., I, 99. antimonate, lattice constants of, A., I, 195. borohydrides, A., I, 22. Gallium organic compounds :---Gallium trimethyl, and its derivatives, A., I, Gallium detection :detection of, fluorescence reactions for, C., 8. Gambusia affinis, action on, of androgens, A., III, 33. Ganglia, abdominal, action of salts on, in crayfish, A., III, 180. basal, volume of, in mammals, A., III, 402. cervical sympathetic and vagal, effect of iodine and thyrotropin on, in guinea-pigs, A., III, 188. cœliac, visceral afferent synapses in, A., III, 403. prevertebral, removal of, diarrhœa and peptic ulcer after, in dogs, A., III, 34. spinal, effect of biotin on, in chick tissue culture, A., III, 330. growth of, effect of vitamin- B_1 on, in tissue culture, A., III, 19. in plasma from vitamin- B_1 -deficient chicks, A., III, 400. neuroglial cells from, growth and modifications of, A., III, 712. thoracic, second, importance of, for sympathic supply of upper extremities, A., III, 582. Ganglioneuroma, pelvic. See under Pelvis.
Gangrene, effect on, of 3:3'-methylenebis-4hydroxycoumarin, A., III, 392. gas, A., III, 73. action of antibiotics on organisms producing, A., III, 436. anaerobes of, fibrinolysins from, A., III, antitoxin, treatment with, A., III, 298. treatment of, A., III, 685. with X-rays, A., III, 63. with sulphonamides, A., III, 428. Gargoylism, A., III, 570. Garnierite, determination in, of nickel, C., 114. Gas, coal, determination in, of benzole and toluene, C., 68.

coke-oven, analysis of, C., 68.

of naphthalene, C., 68. flue, analysis of, C., 115.

253.

lől.

A., I, 222.

determination in, of benzene, C., 115.

of sulphur, apparatus for, C., 52.

Gases, absorption of, by liquid drops, A., I, 244.

accommodation coefficients of, on platinum.

adsorption of, on nickel and on steel, A., I,

monatomic mixed, sound absorption in, A., I,

bubbles of, formation of, A., I, 278,

A., I, 29. A., I, 114. 185. A., I, 147. 149. of, C., 164. 175. 169. C., 80. Gas analysis: fuel, determination in, of carbon monoxide, apparatus for, C., 108. mixed, calculation of composition of, C., producer, determination in, of sulphur, C., 11. town, determination in, of oxygen, C., 11. water-, conversion of, in quartz vessels, A., I,

Gases, colloidal, effect of capillary-active substances on, A., I, 59. compressed, viscosity of, A., I, 149. corona in, at low pressures, A., I, 25. desorption of, from metals, A., I, 35. diffusion of, into solids, A., I, 35. dissociation of, in high-frequency discharge, electric discharge in, diffusion of radiation in, energy transference in, by radiation, A., III, equation of wave propagation in, A., I, 169. excitation of vibrations in, and their mixtures, flame, temperature of, A., I, 285. flow of, measuring apparatus for, (P.), C., fractionating column for, C., 144. ideal, linear flow of, A., I, 193. inert, diffusion of, through metals, A., I, inflammable, ignition of, electric-spark, apparatus for determining minimum energy mixed, equation of state for, A., I, 197. equilibrium of, at high pressures, A., I, 103, fugacity of, A., I, 281. thermal diffusion in, A., I, 81, 274. mobility of electrons in, measured by means of X-ray bursts, A., I, 262. of hard elastic spheres, statistical mechanics of, A., I, 99. partial pressure and solubility of, A., I, 170. discharge in, cathode potential and, current density in, A., I, 75.

spectra of, and Zeeman effect, A., I, 1. sampling of, apparatus for, (P.), C., 143. aspirator for, C., 52. size of bubbles of, A., I, 32. testing apparatus for, (P.), C., 143. of, in relation to thermal conductivity pressure, A., I, 168. thermal equilibrium of, with hot surfaces, A., transmission of, through films and sheets, apparatus for measuring, C., 73. viscosity of, in relation to temperature, A., I, volume of, contained in dried milk powder, warfare, action of, A., III, 282 on respiration, A., III, 363. blue, green, and white cross and explosion, injuries from, A., III, 363. detection of, C., 186. apparatus for, C., 52 eye damage by, A., III, 363. identification of, C., 24. lung damage due to, A., III, 363. protection from, A., III, 282. skin-affecting, injuries from, prophylaxis and therapy of, A., III, 363. treatment of casualties from, materials for, A., III, 363. analysis of, (P.), C., 144. atmospheric, (P.), C., 88. by thermal conductivity, C., 48. in metals, diffusion pump for, C., 95. in molten steel, C., 65. micro-, C., 143. semi-micro-, C., 94. with mass spectrometer, C., 45. analysis of refinery samples, by mass spectrometry, C., 165. detection of, in liquids, (P.), C., 144. determination in, of benzene and naphthalene, by active carbon, C., 68. of carbon monoxide and oxygen, C., 63. Gas analysis apparatus, (P.), C., 45, 101, 143, 144, 203. by thermal conductivity, (P.), C., 48. for hydrogen determination, (P.), C., 57. pressure, C., 197. Gas burners, automatic control for, C., 207.

Gas effusiometer, automatic, C., 52. Gas gangrene. See under Gangrene. Gas law, supplementary postulates and, A., I, 148. Gas masks, respiration in, A., III, 363. service, dermatitis from, A., III, 137. Gasoline. See Petrol. Gastric juice, absence of rennin from, in man, A., III, 255. determination in, of peptic activity, C., 29. pepsin content of, A., III, 412. Gastroduodenal disease. See under Diseases. Gastro-enteritis, milk-borne, due to Salmonella dublin, A., III, 699. Gastroenterology, A., III, 473. Gastrointestival tract, absorption by, of radioactive iron, effect of anemia anoxia, and antecedent feeding on, A., III, 98. cancer of, creative and creatinine excretion in, effect of glycine on, A., III, 667. metabolism in, A., III, 350, 667, 826. disease of, hyperbilirubinæmia in, A., III, 193. military service and, A., III, 34. fœtal monkey's, activity in, A., III, 113. functional, disturbances in, of neuropsychiatric origin, treatment of, A., III, 22. liver and, A., III, 193. motility of, effect of anæsthetics on, in man and dog, A., III, 814. motility and tone of, control of, with novatropine, A., III, 34. tumours of, smooth muscle, A., III, 822. upper, absorption, digestion, and evacuation in, effect of pantothenic acid and inositol on, A., III, 270. Gastrophotography, in natural colours in conjunction with gastroscopy, A., III, 255. Gastropod mollusc. See Onchidella celtica. Gastroscopy, fluorescein as aid in, A., III, 412. Gastrulation, mechanics of, A., III, 387, 571. Gattermann reaction, with methoxydiphenyl ethers, A., II, 16. Gaucher's disease, spleen cerebrosides in, A., III, 549, 755. treatment of, with splenectomy, A., III, 240. Gauges, McLeod, low-pressure measurement with, C., 95. prevention of capillary disturbance in, C., 152. Gauze, sulphathiazole. See under Sulphathiazole. Gazania rigens, constituents of, A., II, 9. Gazania xanthin, cis-trans-isomerisation, spectral characteristics, and structure of, A., II, 9. Geigy 867. See Irgafen. Gelatin, acetylation and methylation of, A., II, 283. determination in, of sulphur dioxide, C., 75. determination of, by precipitation turbidity, A., III, 687. effect of, added to meatless diet, on growth of trout, A., III, 600. on hæmorrhage shock, A., III, 11. effect of grinding on, A., II, 67. gels, freezing of, A., I, 174. injection of, plasma retention, and urinary excretion after, and effect on red cell volume, A., III, 634. setting point of glues and, C., 75. Geldings, calcium, nitrogen, and phosphorus balance of, effect of work on, A., III, 274. Percheron, calcium and phosphorus retention by, A., III, 363. Gelidium latifolium, A., II, 207. Gelsemine, degradation of, to 2:3-dimethylindole, A., II, 147. U-Geminorum, spectra of variable stars of type of, A., I, 161. y-Geminorum, growth curve of, A., I, 49. Genes, chemistry of, A., III, 571. cytoplasm and, A., III, 519. Rb, as cause of mental deficiency, A., III, 725. Genetics, cytoplasmic modification in, A., III, 236.equilibrium of materials in, A., III, 572.

in neoplastic cell transplantation, A., III,

Genetics, law of expansion and extinction in, A., III, 448.

of pigment formation in guinea-pigs, A., III, 388.

of species development in old world cottons, A., III, 449.

of Wensleydale breed of sheep, A., III, 319. segregation of serum components of dove species in, A., III, 388.

species and their sub-divisions from viewpoint of, A., III, 519.

Genista, alkaloids of, A., II, 354.

Genitals, effect on, of median eminence destruction in guinea-pigs, A., III, 109. of œstrogen administration after reproductive period in mice, A., III, 593.

of testosterone in rate treated from birth, A., III, 594.

hypoplastic, treatment of, with stilbæstrol in women, A., III, 735.

nerve tumours of, A., III, 246. red fluorescence of, in women, A., III, 748. response of, to hyperadrenalism in female rats, A., III, 465.

retardation in, treatment of, with testosterone ointment in infant, A., III, 411.

structure and function of, effect of hyper-

thyroidism on, A., III, 734. See also Ovary, Testicles, etc.

Genital tract, proliferation in, of colchicine

treated guinea-pigs, A., III, 5. Genitourinary system, cajedrol as analgesic and antiseptic for, A., III, 834.

a-Gentiobiose, octa (? hepta)-p-benzeneazobenzoate, A., II, 6.

Gentisyl alcohol. See Benzyl alcohol, 2:5-dihydroxy-

Geology, correlation of strata in, by radiochemical analysis, A., I, 257.

Geospheres, porosity of, A., I, 24.

β-cycloGeranic ac ester, A., II, 196. p-bromobenzoylmethyI acid,

Geranylamine, A., II, 248.

2-Geranylammopyridine, and its picrate, A., II, 274.

N'-Geranyl-N'-2-pyridylsulphanilamide, A., II, 274.

Germanicol, and its acetate and benzoate, A., II,

Germanium in topaz, A., I, 48. Germanium halides, redistribution reactions in, A., I, 228.

hydride, spectrum of, Raman, and structure, A., I, 29.

See also Digermane.

dioxide, polymorphism of, A., I, 182.

Germanium organic compounds Germanium tetra-2-furyl, A., II, 66.

tri-a-butyl iodide, A., II, 66. Germanium determination :determination of, C., 157.

as molybdigermanic acid, colorimetrically, C., 109.

in steel, C., 157.

Germicides, effect of, on gonococci, A., III, 74. phenol coefficients and plate tests of, C., 138.

phenolic, efficiency of, by inorganic salt addition to produce oxidation-reduction systems, A., III, 493.

sublethal concentrations of, effect of, on embryonic tissue fragments in culture, A., III, 493.

Gestation. See Pregnancy.

Ghee, adulteration of, detection of, C., 81. See also Butter fat.

Giardiasis, vitamin-A absorption test in cases of, A., III, 671.

Gibbs' formula, negative adsorption and, A., I, 35.

Gierke's disease, A., III, 275. blood-lactic acid in, A., III, 115.

Gigantism, feetal, in bovines, A., III, 786. Gillespite, crystal structure of, A., I, 92.

Girls, school-, ascorbic acid requirement of, A., IIÍ, 201.

Gizzard, erosion of, action of milk against, in chicks, A., III, 48.

Glands, adrenal. See Adrenals.

and their products, A., III, 533, 652; C., 176. Bartholin's and Cowper's, embryonic differentiation of, in opossum after castration and ovariotomy, A., III, 466.

endocrine, disorders in, galactose-tolerance test in, of children, A., III, 249.

effect of, on ageing and growth of skeleton, III, 249.

in relation to body weight in growing and mature New Zealand rabbits, A., III,

in relation to regulation of calcium metabolism, A., III, 106.

of crustacea, A., III, 339.

of South Indian animals, A., III, 533. pancreatic diabetes in relation to, A., III,

role of, in blood-sugar regulation, A., III, 587.

sex, in development and prepuberty, A., III, 809.

treatment with, in gynæcology obstetrics, A., III, 468.

See also Pituitary, Thyroid, etc.

gastric, acid formation by, A., III, 346. secretion of dyes by, A., III, 346. Harderian, red fluorescence of

and susceptibility to carcinogenics, A., III, 748. mammary, adenocarcinoma of, appetite in relation to, in rats, A., III, 542.

cestrogenic substances in production of, A., III, 32.

cancer of, A., III, 668.

after intranasal methylcholanthrene in mice, A., III, 120.

breeding in relation to susceptibility to,

in mice, A., III, 120. familial, A., III, 349.

in mice, A., III, 262.

incidence of, effect of cross-suckling on, in mice, A., III, 196.

effect of testosterone propionate on, in

mice, A., III, 542.
induction of, with methylcholanthrene, influence of breeding on, in mice, A., III, 597.

inherited susceptibility to, in mice, A., III, 663.

menopause and, A., III, 197.

mucinous, A., III, 351.

pituitary of women with, A., III, 251. treatment of, as guide to programmes, A., III, 667. control

chemical composition, lactation activity, and metabolism of, in rats, A., III, 112.

cyclic changes in, in monkeys, A., III, 472. effect on, of steroid hormones in hypophysectomised rats, A., III, 342.

lipolytic activity of, in bovines, A., III,

æstrogen-induced, spectrochemistry of, A., III, 195. polytene chromosomes in, in man, A., III,

479. secretions of, induced by æstrogens, in

bovines, A., III, 739. structure of, effect of adrenalectomy on,

in rats, A., III, 472.

supernumerary, functional, A., III, 538. tumours of, after cestrogen treatment, in mice, A., III, 481.

complexes from, ultracentrifugal studies

of, in mice, A., III, 121. formation of, effect of diethylstilbæstrol on, in mice fed low-cystine diet, A., III, 599.

growth of, effect of low-lysine diet on, in mice, A., III, 665.

occurrence of, genetic influence on, in mice, A., III, 599.

See also Breast. parathyroid. See Parathyroids. pineal. See Pineal gland. pituitary. See Pituitary. preservation of, A., III, 533, 536. suprarenal. See Adrenals.

thyroid. See Thyroid.

Glandular fever, Listeria monocytogenes isolated from, A., III, 372. See also Mononucleosis.

Glass, analysis in, of cords and stones, C., 109. analysis of, microchemically, C., 109.

batch, determination of insoluble fraction of,

calcium nitrate, A., I, 86.

colourless, limestone for making, C., 59.

sands for making, C., 62. constitution of, A., I, 53.

determination in, of arsenic, C., 11. of sodium hydroxide, C., 105. optical, durability of, C., 202.

refractive index and dispersion of, C., 99.

organic, rheometry of, A., I, 15. surface hardness of, C., 172. properties of films on, C., 47.

X-ray transparent, A., I, 276.

silica, and its mixtures, expansion of, A., I,

silicate, structure of, A., I, 243.

spectrum of, absorption, infra-red, and structure, A., I, 77. Raman, A., I, 142.

Glass-blowing, machine for, C., 104.

Sodjum Glauber's salt. See sulphate decahydrate.

Glaucoma, acute, development of peripheral anterior synechiæ in, A., III, 803.

after cataract operation, A., III, 104. blood-choline-esterase values of patients with,

A., III, 248. origin of, nervous factors in, A., III, 650.

simple, ætiology of, A., III, 461. unilateral, pupillary reactions of unaffected eye in, A., IlI, 650.

Glauconite, formula for, A., I, 135. Novo-Lialin district, Urals, A., I, 24. Saratov, Russia, A., I, 184.

Gliocladium fimbriatum, antibiotic from, A., II, 116, 310; III, 292, 613.

Gliomas, intracranial, mixed, A., III, 264.

Gliotoxin, and its derivatives, A., II, 310; III, 613.

plation of, from culture filtrates of Aspergillus fumigatus, A., II, 208. isolation preparation and properties of, A., II, 116; 111, 292.

Globins, electrophoresis of, A., III, 138. in blood in man, A., III, 325.

Globulin, determination of, in blood, C., 125. in serum, C., 77.

hæmostatic, dry mixtures of, with sulphanilamide, preparation and properties of, A., III, 133.

serum-, electrophoretic and ultracentrifugal studies of solutions of, A., III, 793. precipitation of, polarography of, A., III,

γ-Globulin, serum-, human, use of, in prophylaxis and treatment of measles, A., III, 794.

Glomerulonephritis, acute, familial, A.,

renin in blood in, A., III, 576.

electrocardiographic variations in, A., III, functional organisation of kidney in, A., III,

413. plasma- and serum-proteins in, in infants and children, A., III, 167.

spontaneous, in mice, A., III, 659. treatment of, with sulphanilamides, A., III,

d-Glucamine, N-alkyl derivatives of, A., II,

38. D-Gluco-D-guloheptosan $<1, 5>\beta$ <1, 6>,

and its esters, A., II, 38. $d-\beta$ -Glucoheptonic acid, cadmium salt, A., II,

D-a-Glucoheptonitrile hexaacetate, A., II, 327. D-α-Glucoheptose, calcium chloride, compounds

of, A., II, 72. oxime, A., II, 327.

keto-D-Glucoheptulose, 1-iodo-, pentaacetate, A., II, 7.

D-Gluco-D-idoheptonic acid. See d- β -Glucoheptonic acid.

Gluconic acid, calcium salt, action of, compared with calcium chloride, on neuromuscular excitability, A., III, 800.

treatment with, in neuro-muscular dystrophy during pregnancy and labour, A., III, 470.

d-Glucono-S-lactone, utilisation of, by young rats, A., III, 42.

Glucopolysaccharides, structure of, A., II, 361. Glucosaccharic acid, derivatives of, A., II, 121. d-Glucosamine, reaction of, with o-phenylene-diamine, A., II, 35.

180 Glucosamines, hydrogenation of, steric course of, A., II, 73.

β-Glucosan, oxidation of, with lead tetra-acetate in glacial acetic acid, A., II, 7.

Glucose, anhydro-derivatives of, formation of, from nitrate acetates, A., II, 185.

assimilation of, in liver, A., III, 193. determination of, by photometric Somogyi method, C., 191.

in blood, microchemically, C., 125. in worts, C., 79.

effect of, in diabetic acidosis, A., III, 130. on urine secretion in dogs, A., III, 135.

6-fluoride, and its 1:2:3:4-tetra-acetate, A., II,

formation of, by liver, influence of metal ions on, A., III, 606.

injected, disposition of, effect of sodium chloride on, in rats, A., III, 275.

intraperitoneal injection of, effect of, on hypophysectomised rats, A., III, 29.

phosphate, action on, phosphorylase, A., III, 217. preparation of, A., II, 325, 359. 1-phosphate,

preparation and purification of, using ion exchange adsorbents, A., II, 245.

reactions of, with amines, A., II, 37, 251. reducing power of solutions of, effect on, of mercury, A., II, 185.

specific dynamic action of, with oleic acid and thiamin, A., III, 275.

sweetness of, in relation to fructoso and sucrose, A., III, 464.

tolerance curve of, effect of vitamin-D on, in man, A., III, 52.

tolerance to, effect of insulin on, in men, A., III, 729.

of fasted and insulinised chicks, A., III, 550.

return of, in middle-aged diabetics, A., III, 826.

treatment with, in opium addicts, A., III, 280. of infective hepatitis, A., III, 36.

utilisation of, by micro-organisms, and its inhibition, A., III, 294. Glucose, 1-bromo-, 6-fluoride, 2:3:4-triacetate,

A., II, 186.

ncose, diethylmercaptal, penta(triacctyl gallate) and pentagallate, A., II, 6. d-Glucose, penta-p-p'-iodobenzeneazobenzoate, A., II. 6.

aldehydo-D-Glucose pentaacetate, A., II, 327.
pentagallate, A., II, 6.
β-D-Glucose 2:3:4:6-tetraacetate 1-p-benzene-

azobenzoate, A., II, 6. a- and -d-Glucoses, heats of acetylation of, A.,

I, 178. and β-D-Glucoses, penta-p-benzeneazobenzoates, A., II, 6.

d-isoGlucose-p-anisylamine, A., II, 72.

Glucose-6-fluorohydrin, and its derivatives, A., II, 186.

4-Glucosidaminopyrimidines, A., II, 59.

β-Glucosidase, kinetics and temperature quotient of, A., III, 558.

Glucosides, cardiac, A., II, 72.

pharmacology of, compared with somalin, A., III, 210. standardisation of, C., 185.

evanogenetic, formation of, in plants, A., III, 853.

in plants, in relation to soil acidity, A., III, 154.

sensitive to alkali, A., II, 251. d-Glucosides, photolysis of, A., I, 132. N-Glucosides, A., II, 72, 73. Glucosidolipin, of spleen, A., III, 549.

2-Glucosidophloroacetophenone, 4-methyl ether letraacetate, A., II, 362.

-Glucosidoxy-n-valeraldehyde tetraacetate, and its semicarbazone, A., II, 186.

y-Glucosidoxy-n-valeric acid tetraacetate, and its methyl ester, A., II, 186.

Glucosyl-n-amylamine, A., II, 37. Glucosyl-n-butylamine, A., II, 37.

Glucosyldicyclohexylamine, A., II, 37. Glucosyl-n-heptylamine, A., II, 37.

Glucosyl-n-hexadecylamine, A., II, 38. Glucosyl-n-octadecylamine, A., II, 38.

Glue, setting point of gelatin and, C., 75. Glutamic acid, determination of, in proteins,

C., 193. dielectric constants of, and its ions, A., I, 118. effect of, on acetylcholine formation, A., III, 129.

on central action of ammonium ion, A., III, 59.

from tumours, A., III, 40.

nicotinamide from, isolation of, A., II, 274 transamination of, in animal tissues, A., III, 366.

d-Glutamic acid, conversion of, into pyrrolidonecarboxylic acid by rat, A., III, 549.

dl-Glutamic acid, hydrochloride, treatment with, of petit mal and psychomotor seizures, A.,

Glutaminase, preparation and assay of, A., III, 839.

Glutamine, as source of urinary ammonia, A., III, 117.

in animal tissues, A., III, 541.

Glutaric acid, a-bromo-, diethyl ester, A., II,

a-cyano-, diethyl ester, A., II, 169.

a-hvdroxy-, lactone of, methyl ester, A., II, 198.

Glutathione, activation by, of enzymes, A., III, 64.

oxygen absorption by, in alkaline solutions, A., I, 19.

polarography of, A., I, 284. Gluten, quality determination of, C., 179.

Glyceraldehyde, effect of, on small intestine of rabbit, A., III, 34. retarding effect of, on sarcoma formation in

mice, A., III, 747.

Glycerides, synthetic, unsaturated, A., II, 120, 180.

unsaturated, A., II, 211, 287. synthetic, A., II, 318.

 β -Glycerides, aliphatic, A., II, 2. Glycerin. See Glycerol.

D-Glycero-D-guloaldoheptose. See D-a-Gluco-

heptose. Glycerol, determination of, by pyridineacetylation, C., 20. in cork, C., 140.

in johnin, A., III, 299.

in kettle soap, C., 171.

in presence of invert sugar, C., 21. in presence of pentoses, C., 20.

in wines, C., 32.

natural and synthetic, growth of tubercle bacilli on, A., III, 619.

sulphathiazole in, A., III, 493. sweetness of, A., III, 806.

mixtures, A., I, 220.

Glyceryl α-acylate-βy-dielaidate, A., II, 211.

 $\beta \gamma$ -diacylate-a-claidate, A., II, 211. ay-diacylate- β -oleate, A., II, 211. a-n-dodecyl ether, A., II, 317.

preparation of, apparatus for, C., 166. βy-di-n-octoate-α-stearate, A., II, 211. mono- and di-oleates, esters of, A., II, 120.

a-triphenylmethylether, a'-n-dodecoic and a'-tetradecoic esters, and their derivatives, A., II, 180.

Glycidic acid, γγγ-trichloro-, ethyl ester, chloro-hydrin, A., II, 320.

Glycine, complexes of, with zinc salts, A., I, 67. detection of, with Raman spectra, and its dependence on pH, C., 70. dielectric constant of, in dioxan-water

dietary, effect of, on vitamin- B_4 deficiency in chick, A., III, 46.

Glycine, flavianate, A., II, 361.

spectrum of, Raman, A., I, 78. Glycine oxidase. See under Oxidase.

Glycocyamine, methylation of, to creatine, in etiolated wheat germ, A., III, 705. Glycogen, A., III, 606; C., 176.

animal and maize, action of B-amylase on, A., III, 840. content of, in central nervous system of cats

and dogs, A., III, 178. in insects during flight, A., III, 245. effect of injection of, on blood and organs of

dogs, A., III, 97. liver.. See under Liver.

molecules, electron microscopy of, A., I, 31. phosphorylation of, decrease of, after adrenalectomy, A., III, 251. influence of diphtheria toxin on, A., III,

275.

production of, from C₄-dicarboxylic acids in liver, A., III, 357.

staining of, in paraffin sections, A., III, 630.

synthesis of, from glucose by surviving liver, relation of post-mortem interval to, A., III, 491.

Glycols, bacterial control by, in large spaces, A., III, 557.

determination of, in air, colorimetrically, C.,

use of, for air sterilisation, A., III, 295. Glycollic acid, determination of, C., 70.

Glycollonitrile, esters, unsaturated, A., II, 213.

Glycosides. See Glucosides. Glycosuria. See Diabetes.

Glycuronic acid, borneol detoxication by, in man, A., III, 256.

determination of, in biological media, C., 27. with photo-electric absorptiometer, C., 191. excretion of, influence of chemicals and vitamin deficiencies on, in rats, A., III, 550.

synthesis of, glycogen content of rat liver and, A., III, 595.

 β -Glycuronidase, uterine, activity of, effect of cestrogens on, A., III, 538.

Glycylacetanilide-p-dichloroarsine hydrochloride, A., II, 243.

N:N'-Glycylcarbamyl-dl-alanine, A., II, 36. N:N'-Glycylearbamylglycine, A., II, 36.

Glycyl-1-hydroxyprolinediketopiperazine, A., II, 290.

Glycyrrhetic acid, structure of, A., II, 108. Glyoxal, trimeric, A., II, 340, 346.

Glyoxalic acid, ethyl ester, p-carbothoxyphenylhydrazone, A., II, 145.

Glyoxalines, formation of, A., II, 146. Glyoxylic acid, antimony derivatives of, A., II,

Goats, lactating, feeding of, standard equations for, A., III, 418.

Goitre, congenital, A., III, 464.

during thiocyanate treatment of hypertension, A., III, 807.

exophthalmic. See Graves' disease. experimental, A., III, 185. toxic, A., III, 65.

liver insufficiency in, and its treatment, A.,

III, 533. See also Hypertension, Thyroid, etc. Gold, colloidal, detection of, reagent for, C.,

126. reactions of, in relation to serum-proteins,

A., III, 9. standardised, preparation of, C., 127.

electron scattering and polarisation by, A., I, 186.

isotopes, rays from, A., I, 114. solubility of, in thiocarbamide, A., I, 35. spectrum of, L-emission, A., I, 93, 209.

Gold alloys, electrical resistance of, A., I, 86. with copper, spectrum of, X-ray, A., I, 54. with silver, analysis of, spectrochemically, C., 5.

Gold compounds, treatment with, of rheumatoid arthritis, A., III, 281.

Gold salts, treatment with, of rheumatoid arthritis, A., III, 835.

Gold determination :-

determination in, of tellurium, spectroscopically, C., 59.

determination of, in anode sludge and in copper, C., 5. in ores, C., 5, 59.

Gold mines, Ontario, gold-silver ratios in, A., I, 135.

Witwatersrand, dusts and silicates from, A., I, 260.

Gold minerals, British, A., I, 207.

Gold nuggets, analysis of, spectroscopically, C.,

Gold ores, deposition of, A, I, 260.

Ontario, A., I, 160.

Golgi apparatus, staining of, supravitally, A., III, 160.

Gonads. See Genitals.

Gonadectomy, early, sexual differentiation in opossum after, A., III, 466.

Gonadotropin, chorionic and pituitary, treatment with, of cryptorchidism, A., III,

of seminal inadequacy, A., III, 33 effect of, on eunuchoidism, A., III, 412. injected, recovery of, from rabbit urine, A., III, 190.

denaturation of, by urea, A., III, 654. offect of, on ovary in women, A., III, 190. equine, effect of, on hypophysectomised rats,

A., III, 408. failure of ascorbic acid to augment, in rats, A., III, 594.

treatment with, of male infertility, A., III, 737.

use of, in gynæcology, A., III, 813.

excretion of, in epilepsy, eunuchoidism, hysterectomy, menopause, and migraine, in man, A., III, 33.

ovarian response to, effect of nephrectomy on, A., III, 111.

pituitary, effect of, on œstrual phenomena in ewes, A., III, 190.
maintenance of pregnancy induced by, A.

III, 471.

reproductive tract sensitivity to, in hypophysectomised male rats, A., III, 733. serum-. See under Blood-serum.

treatment with, fertility of ova from ewes after, A., III, 470.

urinary, castrate, augmentation of, by nonspecific urinary component, A., III, 737. Goniometers, X-ray, use of, A., I, 238.

Gonioscopy, limits of, A., III, 461.

Gonococci, A., III, 562.

cultures of, medium for transport of, A., III, 562.

State service of, A., III, 772.

growth of, liver extracts as enrichment factor for, A., III, 697.

respiratory enzyme activity and viability of, effect of germicides on, A., III, 74.

Gonorrhœa, prevention of, with sulphathiazole, A., III, 206.

resistance of, to sulphonamides, A., III,

sulphonamide-resistant, treatment of, with penicillin, A., III, 207, 358.

treatment of, A., III, 54.

in Central Mediterranean and North Africa, A., III, 758.

intensive, A., III, 835. with sulphathiazole, A., III, 207. with sulphonamides, A., III, 607.

See also Syphilis. Gorse. See Ulex.

Gossypium, leaf-shape development in, genetic organisation of, A., III, 628. polyploidy in, A., III, 380.

Gossypium hirsutum, octoploid, cytology of, A., III, 85.

Gossypol, A., II, 344. detection of, C., 122.

Gracilaria lichenoides, production of agar from, A., III, 770.

Gradenigo syndrome, complicated by meningitis, treatment of, with penicillin and sulphapyrimidine, A., III, 249.

Grain, properties of, in bulk, C., 80.

Gram, black and green. See Phaseolus mungo and radiatus.

germinating, enzymes of, A., III, 612.

Gram-molecule, distinction between molecular weight and, A., I, 121. Gramicidin, antibacterial and cytotoxic activity

of, A., III, 131. effect of, on mammalian spleen culture, A., III, 210.

on pathogenic protozoa, A., III, 434. hydrolysate of, analysis of, by partition chromatography with starch, A., II, 383. Granite, decomposed, Baton, Nelson, A., I.

pre-anorthosite, Quebec, A., I, 72.

Granite-migmatite, Ayer, at Chelmsford, Mass., A., I, 257.

Granodiorites, petrogenesis of, A., I, 135.

Granulocytopenia, induction and treatment of, in rats fed sulphonamides in purified diets, A., III. 455.

Granuloma, from use of glove powder, A., III, 822.

Grapes, Muscadine, effect of pruning on, A., III, 852.

Grape juice, determination in, of calcium and magnesium, C., 129. Grape vines. See under Vines.

Graphite, electrical and thermal conductivity of, A., I, 274.

sols, dehydrated, C., 104.

solubility of, in austenite, A., I, 102. wetting and swelling of, A., I, 278.

Grass, alpine, carbohydrate metabolism in, A.,

III, 83. blue, Kentucky, growth of, effect of soil temperature on, A., III, 228.

chemical constituents of, during growth, A., III, 441.

colonial bent, growth of, effect of soil temperature on, A., III, 228.

dried and pasture, separation of β-carotene, neo-β-carotene, and xanthophyll from, C., 90.

Kikuyu. See Pennisetum clandestinum. Montana, cellulose and lignin in, A., III, 384. seasonal change in, C., 90.

Rhodes. See Chloris gayana. seeds, sterilisation of, A., III, 382 starved, amino-acids in, A., III, 781.

timothy, growth of, effect of soil temperature on, A., III, 228.

Grasshoppers. See Melanoplus differentialis. Graves' disease, nature of, with reference to its ophthalmic component, A., III, 460. surgical control of, failure in, A., III, 27.

thyroid gland in, action of thiouracil on, A., III, 807.

dissociation of thyrotoxicosis and ophthalmopathy, A., III, 23, 727. See also Thyroid.

Gravity, shock from. See under Shock. Greases, evaluation of, for soap-making, C., 121. lubricating. See Lubricating greases.

Green, A. G., work of, A., I, 134.

Green, Jacob, A., I, 133.

Gregarines, mealworm, resistance of spores and trophozoites of, to low temperatures, A., III,

Greyhounds, hair pigmentation and colour genetics in, A., III, 91.

Grignard reactions, course and mechanism of, A., II, 215, 283.

mechanism of, A., II, 223.

Grignard reagents, β -alkylation with, A., II, 17. cleavage of ethers of anisole type by, A., II,

reaction of, with benzpyrones, A., II, 23. with a-bromoketones, A., II, 367. with carbonyl compounds, A., II, 316. ith chloro-derivatives of substituted amides of malonic acid, A., II, 158. with cyclic β -diketones, A., II, 299. with lactones, A., II, 142.

on oximes, A., II, 306. with β-tetrahydroisoquinolino-ketones, A.,

Grignard reagents, use of, with cobalt chloride, for replacement of halogen of aromatic halides with hydrogen, A., II, 283.

Growth, development and, A., III, 826.

effect on, of fat-soluble vitamins, A., III, 824. Growth constants, equations for, applied to sigmoid growth curves, A., III, 84.

Growth substances, effect of, on starch hydrolysis in leaves, A., III, 86. F_2 , fluorescent, A., III, 46.

plant, A., III, 487.

effect of, on reserve starch, A., III, 782. plant root, relation of, to plant growth and metabolism, A., III, 782.

Guanidine, synergistic action of, with sulphathiazole, A., III, 436.

therapeutic action of, A., III, 209.

Guanidine, nitro-, reduction of, A., I, 251. nitroso-, oxidation potentials of systems of, with amino- and nitro-guanidines, A., I,

4'-Guamdinosulphonylsulphamylazobenzene, 2:4-dthydroxy-, A., II, 368.

δ-Guanido-a-ketovaleric acid, hydrochloride and 2:4-dinitrophenylhydrazone, A., II, 290.

Guanine, detection of, in casein, C., 133.

Guanosine 2-acetate, A., II, 112.

5-triphenylmethyl ether, and its 2-acetate, A., II. 112.

1-Guanyl-4-benzylpiperazine sulphate, and its 4-methiodide hydriodide, A., II, 236.

8-ω-Guanyldecylamino-6-methoxyquinoline, and its hydrochloride, A., II, 57.

8-ω-Guanyldecylaminoquinoline, and ita hydrochloride, A., II, 57.

8-y-Guanylpropylaminoquinoline, its hydrochloride, A., II, 57.

Guayule resins. See under Resins, natural.

Gümbelite, crystal structure of, A., I, 207.

Guillain-Barre syndrome. See Polyneuritis, infectious, acute.

Guinea-pigs, feeder for, C., 93.

folic acid as dietary essential for, A., III, 673. gonadotropic function in, effect of hypophyseal stalk transection on, A., III, 109.

Gums, vegetable, allergenic properties of, A., III, 305.

Gum tragacanth, A., II, 362. Gunfire, injury from, A., III, 818.

Gynæcology, acidosis and alkalosis in, A., III,

androgenic therapy in, A., III, 33, 472. embolism and thombosis in, A., III, 11. endocrine therapy in, A., III, 109, 468. use of equine gonadotropins in, A., III, 813. use of sulphonamides in, A., III, 206. See also Obstetrics.

Gynergen. See Ergotamine tartrate. Gypsum, birefringence of, A., I, 218, 295. growth of urotropin on, A., I, 194. Tartary, spectroscopic analysis of, A., I, 112.

H.

HD15963, spectrum of, A., I, 161. HR8731, spectrum of, shell, A., I, 161.

Habrobracon, compound eye of, size of facets of, A., III, 333.

eggs, meiotic prophase and metaphase in, X-ray sensitivity of, A., III, 388.

intersexual mutants in, A., III, 520. Hæmagglutination, cold, A., III, 454. with gangrene of tips of extremities, A., III,

240. Hæmagglutinin, cold, electrophoresis and anti-

body nitrogen determinations of, A., III,

sulphonamides and, A., III, 830. isoHæmagglutinin, activity of, appraisal of, A., III, 791.

from plasma, concentration and separation of, A., III, 791.

staining

with, A., III, 321. Hæmangioendothelioma, cultural characteristics

Hæmalum-aurantia-anıline-blue,

of, A., III, 598.

Hæmangioma, of rectum. See under Rectum. Hæmatite, powdered, magnetic properties of, A., I, 219.

Hæmatocolpos, after stilbæstrol administration, A., III, 409.

Hæmatocrit, reading of, in dogs, A., III, 8. venous, value of, effect of adrenaline on, in dogs, A., III, 8.

Hæmatocrit tube, C., 126. Hæmatology, A., III, 607.

Hæmatoma, subdural, diagnosis and treatment of, A., III, 403

in infancy, A., III, 332 psychiatry in, A., III, 180.

Hæmatometra after stilbæstrol administration, A., 11I, 409.

Hæmatopoiesis, action on, of specific stimulators, A., 111, 162.

from beef liver, A., III, 321.

of vitamin-Be, in chicks, A., III, 487. physiology of, in infants and children, A., III, 321.

thyroid gland and, A., III, 728.

Hæmatoporphyrin, fluorescence of, and its extinction, A., I, 237.

Hæmatoxylin, Ehrlich's, ripening of, A., III,

Hæmin, chloro-, A., II, 382.

Hæmins, conversion of, into bile pigments, A., 11, 381.

effect of, on oxidation, A., III, 838.

Hæmochromatosis, iron mobilisation in, with administration of chemicals, A., III, 791. pulmonary, in boy, A., III, 723.

Hæmoconcentration. See Erythrocytosis.

Hæmocyanin from Helix pomatia, A., III, 838.

Hæmoglobin, coagulated, human, ox, and pig, effect of grinding on, A., II, 67. content of, in blood of cancer-strain mice, A.,

III, 748. determination of, C., 76, 174.

blood sampling for, C., 27. by photo-cleetric absorptiometers, C., 76.

photo-electrically, C., 125. feetal and maternal, human, oxygen affinity

of, A., IlI, 17. formation of, amino-acids in, A., III, 323. dietary protein in, A., III, 41.

injection of, reaction of blood and organs of dogs to, A., III, 715.

reaction of, with nitrite, A., III, 323.

standards of, Haldane, British Standards Institute, A., III, 633. National Physical Laboratory, A., III,

452. in Indian children and adolescents, A., III, 167.

Hæmoglobinæmia, in athletes, A., III, 163.

Hæmoglobinometers, C., 28. Haldane, A., III, 633; C., 174.

Hæmoglobinuria, after plasmoquin administration, A., III, 279.

due to marching, A., III, 258, 660. in athletes, A., III, 163.

Hæmolysins, in urine, A., III, 540.

natural, protective action of serum against, A., III, 164.

Hæmolysis, by streptococci, serological groups in relation to, A., III, 773.

colloid-osmotic, A., III, 163. inhibition of, A., III, 7.

kinetics of, A., III, 714. Hæmolytic diseases. S See Blood diseases, Diseases, Erythroblastosis fœtalis, etc.

Hæmonchosis, treatment of, with phenothiazine, A., III, 134.

Hæmophilia, action on, of œstrogens, A., III,

blood-prothrombin content in, effect of vitamin-K on, A., III, 96. fibrinogen deficiency as factor in, A., III, 165.

treatment of, heredity and, A., III, 388. with transfusions, A., III, 165. Hæmophilus influenza bactericidal action of

guinea-pig serum on, A., III, 507. growth of, V-factor substitutes for, A., III, 846.

in bronchiectasis, A., III, 148.

Hamophilus influenza, infections with, treatment of, A., III, 551.

isolation of, in laryngitis, A., III, 372. laryngitis from, with bactermmia, A., III, 74.

meningitis due to, A., III, 772.

Hæmophilus influenzæ B, antigenic relations of, with pneumococci, A., III, 74.

Hæmophilus influenzæ suis, synergistic action of, with swine influenza virus, A., III, 148. Hæmophilus parainfluenzæ, growth of, V-factor substitutes for, A., III, 846.

Hamophilus pertussis, antisera against, in experimental infection, A., III, 508.

infection by, immunity in, A., III, 507. vaccine, for immunisation, A., III, 223.

virulence of, after serial passage in mice, A., III, 149.

Hæmorrhage, effect of, on blood-fat, A., III, 8. fraction producing, from Serratia marcescens culture filtrate, A., III, 122.

hæmoconcentration and shock after, A., III, 243.

hypoprothrombinamic, dicoumarol-induced, treatment of, with vitamin- K_1 oxide, A.,

intracerebral, non-traumatic, A., III, 403. isinglass as blood substitute in, A., III, 11. pentothal sodium administered after,

circulatory effects from, A., III, 58. plasma-protein level after, thoracic duct ligation and, A., III, 790.

plasma-proteins and red cell volume after, A., III, 240.

cyclopropane administered after, circulatory effects from, A., III; 360.

puberal, irradiation of spleen and pituitary for control of, A., III, 187.

pulmonary, effect of bile salts and fasting on, A., III, 397.

with infection intestinal anaerobio organisms as cause of, A., III, 396. rectal, A., III, 193.

severe, survival after, effect of environmental temperature on, in dogs, A., III, 174. shock from. See under Shock. stomach. See under Stomach.

time of, post-traumatic diminution of, A., III, 165.

Hæmorrhagic disease. See Disease, hæmorrhagic, Hæmophilia, etc. tropical. See Onyalai.

Hæmosiderosis. See Hæmochromatosis.

Hæmostasis, blood platelets in relation to, A., III, 324.

Hafnium, spectrum of, K-absorption, A., I, 233. L-emission, A., I, 261.

Hair, human, amino-acids and proline of, A., III,

arsenic in, and its medico-legal significance, A., III, 760.

grey, effect on, of p-aminobenzoic acid and calcium pantothenate, A., III, 47.

lotions for, determination in, of arsenic, C., 87.

of salicylic acid, C., 37.

red, isolation of iron pigment from, in man, A., III, 117.

mammalian, biology of, A., III, 1, 745. microscopy of, with reference to cuticular

scales in mammals, A., III, 788.
pigmentation of, and colour genetics in greyhounds, A., III, 91.
superfluous, X-ray treatment for, cheek epithelioma after, A., III, 822.

See also Achromotrichia. Hairball. Sec Bezoar.

Hair lacquers. See under Lacquers. "Hair silver," A., I, 47.

Halides, distribution and excretion of, in body, A., III, 215.

mixed, analysis of, C., 13.

organic, unsaturated, reaction of, with sodium vapour, A., I, 285. See also Alkali and Alkyl halides.

Halloysite, colloid formation from, A., I. 208. Haloform reaction, A., II, 221.

Halogens, atomic refractivity of, in organic compounds, A., I, 29.

determination of, apparatus for, C., 43. in halogenated fluoresceins, C., 23.

in organic compounds, C., 19.

 ψ -Halogens, A., II, 71. Halogen acids, structure of, A., I, 238.

Halogenohydrins, from stilbene oxide, by means of hydracids, A., II, 334.

Halophytes, hydrophytes, and xerophytes, A., III. 227.

y-Hamameli-tannin, A., II, 38.

Hamsters, common, wild, mating system in, A., III, 388.

nutritional requirements of, A., III, 483. striped. See Cricetulus griseus.

Hands, blood flow and temperature of, immersed in water, A., III, 721.

dermatitis of, A., III, 836.

electrical skin resistance patterns in, in relation to anatomy and neurology, A., III,

films on, non-perceptible, formation of, by cationic soaps, A., III, 359.

malformation of, hereditary, A., III, 517.

Hand-Schuller-Christian disease, A., III, 52. granuloma of bone and, A., III, 570.

Haptens, inhibition by, of antisera precipitation, A., III, 779.

Hardness, measurement of, instruments for, C., 54. relation of, to damping and plasticity, C., 55.

units of, table of, C., 54. Hardy-Weinberg law, A., III, 91.

Harman, derivatives, constitution of, from ultra-violet spectra, A., II, 63.

Havelock's formula, A., I, 268.

Hay fever, gelatin-pollen extracts in, A., III, 851. Weltmann reaction in, A., III, 851. See also Allergy and Diseases, allergic.

Head, injuries to, and their after-effects in children, A., III, 180. involving air sinuses, A. III, 582. operations on, anæsthesia for, A., III, 361.

wounds of, gunshot. See under Wounds. See also Skull.

Headaches, after lumbar puncture, A., III, 647. See also Migraine.

Health, national, nutritional problems in relation to, A., III, 351.

public, vitamins and, A., III, 353. school, advances in service of, A., III, 745. See also Hygiene.

Hearing, aeronautical design in relation to, A., III, 403.

aids to, A., III, 105, 405.

training for optimum use of, A., III, 405. bone conduction threshold measurements in, A., III, 249.

conservation of, A., III, 727. examination of, functional, A., III, 532.

in relation to military problems, A., III, 403. inception of, development of organ of Corti in

relation to, A., III, 805. loss of, industrial noise in relation to, A., III, 586.

percentage, A., III, 532.

of deaf and normal persons, on Jungfrau-joch, A., III, 651.

post-war problem of, A., III, 337.

testing of, audiometrically, in school children, A., III, 805.

See also Deafness, Ears, etc.

Heart, action on, of deoxycorticosterone and low-potassium diet, in rats, A., III, 456.

of goitrogenic diet, A., III, 406. of X-ray therapy, A., III, 430.

anatomy of, in reptiles, A., III, 785. aneurysm of, clinical, electrocardiographic, and radiological findings in, A., III, 242. arrest of, due to potassium action, A., III, 170.

renal apoplexy with resuscitation after, A., III. 639.

arrhythmias of, treatment of, with quinidine, intramuscularly, A., III, 210. under cyclopropane anæsthesia, A., III, 833. Heart, atrioventricular node of, properties of, effect of drugs on, A., III, 98.

auricles, left, bell thrombus in, A., III, 170. beat of, in avian embryos, A., III, 797.

irregular, treatment of, with potassium, A., III, 170.

beating, acetic acid destruction by, A., III, 525.

block of, A., III, 637.

congenital, A., III, 170, 576.

in digitalis treatment, exercise test in, A., III, 798.

bundle branch block and nodal rhythm of, after aspirin hypersensitivity, A., III, 719. compression of, A., III, 455.

crab's, pharmacology of, A., III, 57.

decompensation in, recovery from, blood density and volume in, A., III, 638.

disturbances in, in relation to endocrine system, A., III, 797.

efficiency, output, and size response of, to composition of inspired air, A., III, 398.

extracts, cell-free, phosphorylation in, A., III, 289.

fœtal, arrhythmias due to anoxia in, recognition and treatment of, A., III, 718. rate variation in, during pregnancy, A., III, 455.

sounds of, recording and reproducing of, A., III, 455.

foramen ovale of, post-embryonic transformations of, in mammals and man, A., III, 711.

frog's, response of, to acetylcholine, pituitary and, A., III, 653.

See Glucosides, cardiac. glucosides acting on. glycogen and phosphocreatine level in, effect of dinitrophenol, swimming, and thyroid on, A., III, 169.

hypertension and, A., III, 14.

hypertrophy of, idiopathic, congenital, A., III,

rôle of coronary arteriosclerosis in, A., III, 639.

isolated, action on, of l-ascorbic acid, in frogs, A., III, 13.

of l-ascorbic acid and its derivatives and hydrogen peroxide, in frogs, A., III,

of tert.-butyl hydrogen peroxide and lactones, in frogs, A., III, 759.

carbon dioxide assimilation by, in mammals, A., III, 326.

mechanical response of, to anoxia, of mammals, A., III, 326.

lesions of, associated with multiple rheumatoid arthritis, A., III, 396.

development of, in thiamin-deficient rats, A., ÎII, 396.

movements of, recording of, dielectrograph for, A., III, 326.

output of, in syncope induced by gravity, roentgen kymographic determination of, A., III, 395.

pseudo-monoventricular, terminating in brain

abscesses, A., III, 446.
rate of, effect on, of diethylstilbæstrol in

albino rats, A., III, 31. of exercise of dogs with denervated

hearts, A., III, 395.

emotional responses of, sympathetic and vagal interaction in, A., III, 241. low, in newborn rats, A., III, 525.

reflex slowing of, in rabbits, A., III, 647. response of, to reflex activation of vagus by neosynephrin and pitressin, A., III, 636.

rhythm, abnormal, treatment of, quinidine, A., III, 428.

rhythmic property of, effect of carotid sinus stimulation on, in man, A., III, 169. right, pressure recording of, in man, A., III, 455.

sounds of, extra- and functional, A., III, 13. systolic, A., III, 638.

tonus and venopressor mechanism of, A., III,

valves, aortic, bicuspid, with obliteration of commissural raphe, A., III, 327.

Heart, ventricle, beating, drug actions in, indicating lack of innervation in turtles, A., III, 797.

fibrillation of, due to coronary occlusion, A., III, 15.

hypertrophy of, electrocardiography of, A., III, 15.

infarction of, calcification of, during life, A., III, 14.

left, lateral wall infarction of, A., III, 638. stroke volumes of, effect of stretch on, A., III, 525.

weight of, prediction of, in man, A., III, 169. Heart diseases, A., III, 719.

anæsthesia in relation to, A., III, 429.

carditis, constrictive, pericardectomy for, A. III, 396.

congenital, development of pulmonary tuberculosis in, A., III, 456.

diagnosis of, A., III, 98.

congestion, due to mitral stenosis, pulmonary tuberculosis-like symptoms in, A., III, 170. coronary, associated with short PR interval and prolonged QRS, A., III, 797.

Dupuytren's contracture as sequel to, A., III, 241.

treatment of, A., III, 241.

diagnosis of, cardioscopy, electrocardiography,

and stethography in, A., III, 242. failure, congestive, blood volume in, A., III, 8.

fluid dynamics in, A., III, 456. in newborn infants, A., III, 15.

liver function in, A., III, 256.

protein content of extracellular fluid in, A., III. 525.

spinal anæsthesia during labour in, A., III,

thyrotoxicosis as cause of, A., III, 170. treatment of, with digitalis, A., III, 210. with digitalis and ouabain, A., III, 57. in Selective Service examinees, A., III, 456. legal aspects of, A., III, 170.

mitral valve, radiological diagnosis of, A., III,

pregnancy and, A., III, 410.
rheumatic, and rheumatic fever in Los
Angeles children, A., III, 638.

in Cincinnati Hospital, A., III, 576. incidence of bacterial endocarditis in, A., III, 242.

treatment of, with sulphanilamide, in children, A., III, 53.

sarcoma, primary, A., III, 481.

traumatic, acute, A., III, 170.

non-penetrating chest injuries in relation to, A., III, 242.

treatment of, with lanatoside-C, A., III, 608. See also Angina pectoris, Endocarditis, etc.

Heartburn, in pregnancy, treatment of, with vitamin-B, A., III, 125.Heat, conduction of. See Thermal conductivity.

molecular, of organic vapours, A., I, 121. production of, minimum base value of, in animals, A., III, 49.

specific, determination of, C., 47. of mixed acids, A., I, 8.

Heat capacity of fine wires, C., 100.

Heat of adsorption, of long-chain compounds, A., I, 245.

of vapours on solids in relation to heat of immersion of the solid, A., I, 83.

Heat of formation, and bond energy of organic compounds, A., I, 282, of alloys, A., I, 38.

Heat of fusion, of alloys, A., I, 38.

Heat of hydration of gaseous ions, A., I, 178. Heat of immersion of solids in relation to heat

of adsorption of vapour on the solid, A., I, 83. Heat of mixing, calculation of, from phase diagram, A., I, 155.

of alloys, A., I, 38 Heat of solution, calculation of, from solubility data, A., I, 283.

Heat of sublimation, surface energy and, A., I, 278.

Heat of vaporisation, surface energy and, A. I, Heaters, glass immersion, C., 207.

Heavy spar, growth of quinol on, A., I, 194.

Hederagenin, rings A and B in, oxidative degradation of, A., II, 108.

Hedragenone hydroxycarboxylolactone, derivatives of, A., II, 108.

Helianthus annuus, growth and transpiration in, effect of soil moisture on, A., III, 81. hypocotyl cells of, osmotic properties in, A., III, 307.

dl-Heliotridane. See 1-Methylpyrrolizidine. isoHeliotridene, and chloro-, and their picrates, A., II, 87.

Heliotropin, formation of, by enzymes, A., III, 286.

accommodation coefficient of, on Helium, platinum, A., I, 199.

collisions of, with alkali-metal ions, A., I, 73. distribution of, in rocks, A., I, 257.

electron mobility in, A., I, 186. formation of, in igneous rocks, A., I, 293.

in minerals and rocks, A., I, 46, 232. liquefier for, and hydrogen, C., 48.

spectrum of, effect of electric field strength on, A., I, 261.

temperature of, obtained without use of liquefied hydrogen, C., 101.

Helium determination :determination of, in air, A., I, 293.

in terrestrial materials, C., 153. Helium H, liquid, Reynolds number for, A., I,

Helix, ventricle of, effect on, of alkaline cations

and earths, and temperature, A., III, 637. Helix pomatia, cardiac muscle in, activity of,

effect of temperature on, A., III, 636. hæmocyanin of, A., III, 838. Helminthosporium sativum, inoculation with,

and Fusarium culmorum, of wheat, A., III, 783.

Hemianopia, binasal, A., III, 586.

Hemicellulose, determination of, in feedingstuffs, C., 133.

Hemimellithenol, p-nitrobenzoate of, A., II, 295. Hemipinic acid, syntheses of, from guaiacol, A., II, 260.

Hens, blood, body fat, eggs, and liver of, carotenoid and vitamin-A in, effect of vitamin-A intake on, A., III, 421.

diet of, and vitamin-A potency of their eggs, A., III, 43.

pantothenic acid requirement of, fed heated diet, A., III, 47.

Sec also Chickens, and Fowls.

Hepacrine. See Atebrin.

Heparin, administration of, subcutaneous, A., III, 635.

and its influence on toxicity of cobra venom, Congo-red, digitaloids, etc., A., III, 164. barium hydrogen salt, A., II, 28.

chemistry of, A., III, 9.

determination of, C., 175 dicumarol and, A., III, 453.

density, A., III, 95. effect of, on blood,

on platelet agglutination, A., III, 94. on vasoconstrictor action of shed blood, A., III, 525.

Heparinic acid, barium hydrogen salt, crystalline, A., II, 122.

Hepatectomy, effect of, on resistance of rats to heat and cold, A., III, 115.

Hepatitis. See under Liver diseases.

Hepatomas. See under Liver diseases.

Heptadecyl-p-nitrobenzenesulphonamide, A., II,

N'-n-Heptadecylsulphanilamide, A., II, 274. Heptaethyleneoctamine, and its benzoyl derivative, A., II, 249.

Heptaldehyde, and a-bromo-, and their derivatives, A., II, 360.

bisulphite, treatment with, of cancer, A., III, 667.

2:3:5:6:8:4a:9a-Heptamethyl-4a:9adihydroxanthen-1:4-quinone, 7-hydroxy-, and its ethyl ether, A., II, 376.

Heptanal, sodium bisulphite methyl salicylate, action of, on carcinoma and lymphosarcomatissue cultures, A., III, 747.

n-Heptane, aromatisation of, catalysed with chromic oxide gel, A., I, 131. surface tension of, saturated with nitrogen, A., I. 58.

n-Heptane, y-oximino-, A., II, 247.

andithiol-, A., II, 2.
cycloHeptane, derivatives of, ring enlargement of, A., II, 194.

vibrational frequencies of, A., I, 265.

Heptan- β -ol, a-nitro-, A., II, 152, 247.

Heptan-γ-ol, β-nitro-, A., II, 247.

Heptan-δ-ol, γ-amino-, and its benzoyl derivative, A., II, 152. y-nitro-, A., II, 247.

Heptan- β -ol- ζ -one, dil carbazone, A., II, 270. dihydrate and semi-

cycloHeptanone cyanohydrin, A., II, 194. △-Heptene, a nitro , A., II, 247.

Δβ-Heptene, a-bromo-, A., II, 357.

cycloHeptenylethylbarbituric acid, decomposition of, A., III, 59. chemical hypnotic action of, A., III, 59.

Heptoic acid, β -hydroxy-, and its ethyl ester, A.,

O-n-Heptoylsalicylic acid, methyl ester, A., II,

N¹-n-Heptoylsulphanilamide, A., II, 365.

2-N4-n-Heptoylsulphanilamido-3-methyl-2:3dihydrothiazoline, A., II, 26. 5-Heptylaminoacridine hydrochloride, A., II, 82.

8-y-n-Heptylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

a-n-Heptyl-n-hexadecoic acid, A., II, 69.

n-Heptylcyclohexane, A., II, 40.

n-Heptylcyclopentane, 3-bromo-, A., II. 187. 3-n-Heptylcyclopentane-1-carboxylic acid, A., II, 187.

1-n-Heptylcyclopentanol, p-nitro- and 3:5-di-nitro-benzoates, A., II, 219.

n-Heptyl-∆²-cyclopentene, A., II, 187. Hermaphroditism, A., III, 472. in rodents, A., III, 592.

Hermidium alipes, phytochemistry of, A., III,

Hernia, diaphragmatic, A., III, 385.

inguinal, treatment of, by injections under operative visualisation, A., III, 473. stomach. See under Stomach.

strangulated, effect of retrograde venous thrombosis in, A., III, 814.

Heroin, fate of, in vitro and in vivo, A., III, 281. Herpes, treatment of, with contramine, A., III, 62.

virus, infantile eczema caused by, A., III, 849. infection by, in mice, A., III, 225.

Herpes zoster, treatment of, with ergotamine tartrate, A., III, 62.

Herpes zoster ophthalmicus, treatment of, with smallpox vaccine, A., III, 644.

Heterochrony in primordia of segmental organs, A., III, 787.

Heterocyclic compounds, action of sulphur on, A., II, 235, 239.

arylamino-, A., II, 348.

containing nitrogen, synthesis of, A., II, 203. nitrogenous, A., II, 277, 278.

polynuclear, condensed, A., II, 145. synthesis of, A., II, 238.

Heterodera schachtii, larval emergence in, stimulation of, by silver compounds, A., III,

Heteropneustes fossilis, poison glands in pectoral spines of, A., III, 597.

Heteropolar compounds, A., II, 55.

Hexa-aryletbanes, dissociation of, A., I, 16; II, 217, 329,

Hexacene, synthesis of, A., II, 364. Hexacene-6:15-quinone, A., II, 364.

Hexadecahydro-9:9'-dianthryl, A., II, 254. n-Hexadecane-γξ-dione, A., II, 181.

 $\Delta^{\theta-n}$ -Hexadecenoic acid, and its methyl ester, A., II, 180.

4'-n-Hexadecoamidodiphenylsulphone, 4-amino-, 4-acetyl derivative, A., II, 131.

Hexadecoxyacetaldehyde, oxime, A., II, 285. Hexadecyl sulphide, A., II, 90.

5-Hexadecylaminoacridine hydrochloride, A., II,

1-n-Hexadecylbenztriazole, and its derivatives, A., II, 112.

3-Hexadecylcoumarin, 4-hydroxy-, A., II, 166. d-a-Hexadecylglycerol. See Chimyl alcohol.

n-Hexadecylcyclohexane, A., II, 40.

a-n-Hexadecylthiolacetic acid, A., II, 151.

a-n-Hexadecylthiol-n-decoic acid, and its barium salt, A., II, 151.

a-n-Hexadecylthiol-n-dodecoic acid, and its barium salt, A., II, 151.

a-n-Hexadecylthiol-n-hexoic acid, and its barium salt, A., II. 151.

a-n-Hexadecylthiolpalmitic acid, and its barium salt, A., II, 151.

a-n-Hexadecylthiolpropionic acid, A., II, 151. a-n-Hexadecylthiol-n-tetradecoic acid, and its barium salt, A., II, 151.

a-n-Hexadecylthiol-n-undecoic acid, and its barium salt, A., II, 151.

a-n-Hexadecylthiol-n-valeric acid, and barium salt, A., II, 151.

Hexadeuteracetone, spectrum of, absorption, ultra-violet, A., I, 264.

cycloHexadiene, 1-chloro-2-nitro-, A., II, 357. 1:1:3:3:5:5-Hexaethoxycyclohexane, A., II, 130. Hexaethylbenzene, spectrum of, absorption, A.,

Hexacyclohexyldiplumbane, solubility of, in benzene and chloroform, A., I, 199.

Hexahydroanthracene, A., II, 254.

trans-Hexahydroanthrone, and its derivatives, A., II, 254.

Hexahydrobenzoic acid, cholestanyl ester, A., II, 301.

Hexahydrobenzoic acid, cisand trans-4-hydroxy-, and their derivatives, A., II. 259.

trans-4-hydroxy-, 4-acetyl derivative, and its derivatives, A., II, 259.

Hexahydrobenzosuberane. See Dicyclo-(0:4:5)undecane.

 N^1 -Hexahydrobenzoylsulphanilamide, A., II, 365.

α-Hexahydrocarvacryl-β-1-decahydro-naphthylethane, A., II, 41.
 α-Hexahydrocarvacryl-β-diisoamylethane.

4-180Propyl-2-ββ-diisoamylethylhexahydrotoluene.

Hexahydrodiginigenin, monoacetate, A., II,

(+)-Hexahydro- ψ -ionone, and its semicarbazone, A., II, 31.

1:2:3:4:5:8-Hexahydronaphthalene, nitrochloride of, A., II, 368.

Hexahydronicotinic acid, as growth promoting factor for Staphylococcus aureus Bacillus proteus vulgaris, A., II, 273. growth-promoting action of, A., III, 615.

Hexahydroyobyrine, A., II, 63. Hexahydroyobyrinecarboxylic acid, hydroxy-.

See Tetradehydrovohimbeaic acid. Hexakispyridine rhodous halides, A., II, 377.

Hexakispyridine μ dibromodirhodium, dibromo, A., II, 377.

Hexametaphosphates. See under Phosphorus. 1:2:3:5:6:7-Hexamethoxy-9:10-dihydro-

anthracene, A., II, 314. 2:3:6 :3':6'-Hexamethoxydiphenyl, and 5:5'-dinitro-, A., II, 333.

3:5:8-3':4':5'-Hexamethoxyflavone, 7-hydroxy-, A., II, 271.

Hexamethylbenzene, spectrum of, absorption, A., I, 164.

3:3'-3":3"-Hexamethylenetetrabis-4hydroxycoumarin, and its tetramethyl ether,

A., II, 166. Hexamethylenetetramine, additive compounds

of, with boron fluoride, A., I, 22. crystals, growth of, on gypsum, A., I, 194. thermochemistry of, and its derivatives, A., I,

282. Hexamethylenetetraminetetra-azidocopper, A., I,

Hexamethylleucophoenicin, A., II, 49.

Hexamethyl-leucossophoenicin, and dinitro-, A., II. 49.

quantitative Hexamminocobaltic salts analysis, C., 15.

n-Hexane, a-amino-βy-dihydroxy-, and its derivatives, A., II, 4.

y-amino-a8-dihydroxy-, and its derivatives, A., II, 4.

y8-dichloro-, condensation of, with anisole, A., II, 257.

cycloHexane, and its derivatives, physiological response of rabbits to, A., III, 762. viscosities of, at b.p., A., I, 81.

catalytic dehydrogenation of, A., I, 180, 288. catalytic dehydrogenation and decomposition of, over metallic catalysts, at high temperatures, A., II, 123.

energy, entropy, and heat capacity of, A., I, 8; C., 47.

spectrum of, fluorescence, A., I, 266. thermal decomposition of, A., I, 106.

vibrational frequencies of, A., I, 265. cycloHexane, 1:2-dichloro-, condensation of,

with anisole, A., II, 257. 1-chloro-2-nitro-, A., II, 358.

n-Hexane-y-carboxylic acid, γδ-dicyano-, ethyl ester, A., II, 13.

cycloHexanecarboxyloxy-n-butane, y-nitro-β-4amino-, and its derivatives, A., II, 317.

cycloHexanediols, a-substituted, cis-chlorohydrins, magnesium dehalogenation of, A., IĬ, 335.

cycloHexane-1:4-diol, dehydration of, A., II, 335.

Hexan-β-ol, α-nitro-, α-naphthylurethane of, A., II, 247.

Hexan-y-ol, β-nitro-, a-naphthylurethane of, A., II, 247.

Hexan-δ-ol, γ-nitro-, α-naphthylurethane of, A., II. 247.

cycloHexanol, condensation of, with halogenobenzenes, in presence of sulphuric acid, A., II,

cycloHexanols, preparation of, by catalytic reduction of phenols, A., II, 160.

cycloHexan-2-onecarboxylic acid, ethyl ester, reaction of, with diazobenzene, A., II, 247.

cycloHexanone-4-carboxylic acid, and its ethyl ester, A., II, 259.

cycloHexanone-4:4-dicarboxylic acid, A., II, 259. cycloHexanone γ (or β)-hydroxy- $\alpha\beta$ (or $\alpha\gamma$)propylene ketal, and its derivatives, A., II, 33 cycloHexanone-2:4:4-tricarboxylio acid, triethyl

ester, A., II, 259. Hexacyclopentyl, A., II, 187.

1:1:2:3:5:6-Hexaphenylindene, A., II, 124. aaa $\epsilon\epsilon\epsilon$ -Hexaphenyl-S-methyl- $\Delta\gamma$ -n-penten- β -one, A., II, 133.

Hexatsopropyldiphenylsulphone, dinitro-, A., II, 155.

 $\Delta\beta$ -Hexene, β -nitro-, A., II, 247. Δ'-Hexene, y-nitro-, A., II, 247.

cycloHexenes, substituted, thermal decomposition of, A., II, 292.

cycloHexene oxide, condensation of, with anisole, A., II, 257. Δy-Hexenol, leaf alcohol, stereoisomerism of, A.,

II, 118. cis- and trans-Δγ-n-Hexen-a-ols, and their

derivatives, A., II, 30. ∆²-cycloHexenones, derivatives of, A., II, 368. $\alpha-\Delta^{1}$ -cycloHexenyl- α -allyl- Δ^{γ} -n-pentenonitrile,

A., ĬI, 47. ω - Δ^{g} -cycloHexenyl- $\omega\omega$ -dimethylacetophenone,

A., II, 272. $a-\Delta^1$ -cycloHexenyl- Δ^{γ} -n-pentenonitrile, A., II,

 α - Δ^1 -cycloHexenyl- α -phenyl- Δ^γ -pentenonitrile, A., ĬI, 47.

a-11-cycloHexenyl-a-phenyl-n-valeronitrile, A., II, 47.

cycloHexenylpropionic acids, A., II, 197.

Hex-3-en-5-yn-2-ol, condensation of, carbonyls, A., II, 177.

n-Hexoamide, δ-hydroxy-, A., II, 198. 4'-n-Hexoamidodiphenylsulphone, 4-amino: 4-acetyl derivative, A., II, 131.

Hexestrol, analogues of, A., II, 13. tablets of, lactation induction with, in bovines, A., III, 739.

subcutaneously implanted, absorption of, A., III, 655.

Hexestrol, treatment with, of menopause, A., III, 254.

n-Hexoic acid, alkyl esters, A., II, 3. ay-benzylideneglyceryl and β -glyceryl esters,

n-Hexoic acid, ϵ -bromo-, ethyl ester, preparation of, A., II, 287.

Hexolactam, ε-amino-, polymeride, polymerisation, structure, and viscosity of, A., I, 279.

Hexose, diphosphate, oxidation of, by barley, A., III, 624.

Hexoses, oxidation of, biochemically, to oxalic acid, A., III, 219.

O-n-Hexoylsalicylic acid, methyl ester, A., II, 166.

2- N^4 -Hexoylsulphanilamidopyrimidine, A., II, 277.

 $2-N^4-n$ -Hexoylsulphanilimido-1-methyl-1:2dihydropyridine, A., II, 26.

 $2-N^4-n$ -Hexoylsulphanilimido-3-methyl-2:3dihydrothiazoline, A., II, 26.

N⁴-n-Hexoylsulphanilylsulphanilamide, A., II, 26

cycloHexyl sulphite, A., II, 318. sulphite, 2-chloro-, A., II, 187.

cycloHexyl acetoxymethyl ketone, trans-4hydroxy-, 4-acetyl derivative, and its semicarbazone, A., II, 259.

5-cycloHexylaminoacridine hydrochloride, A., II,

8-y-cycloHexylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

 β -cycloHexyl-a-p-anisylethylamine, A., II, 293. cycloHexylbenzene, homologues of, and their hydrogenation products, A., II, 123. cycloHexylbenzene, m-bromo-, A., II, 329.

9:9-spirocycloHexyl-3:4-benzfluorene, and its picrate and 1:2-quinone, A., II, 215. spectrographic characterisation of, A., II. 216.

m-cycloHexylbenzoic acid, and its ethyl ester, A. II, 329.

 β -p-cycloHexylbenzylaminoethylguanidine dihydrochloride, A., II, 366.

N-p-cyclo Hexylbenzylethylenediamine, A., II, 366.

β-cycloHexyl-Δαβ-butenolide, trans-4-hydroxy-, A., II, 259.

cyclo Hexyl- $\Delta^{\alpha\beta}$ -butenolide, β -trans-4-hydroxy-, and its β -trans-4-acetyl derivative, A., II, 259. β -n-Hexylbutyric acid, p-toluidide of, A., II, 178. cycloHexylbutyrolactone, β:β-trans-4-dihydroxy-, diacetyl derivative, A., II, 259.

9:9-spirocycloHexyl-1:2:3:4-dibenzfluorene, and its picrate, A., II, 215.

n-Hexyldihydropyrimidine, A., II, 324. N'-cycloHexyl-N-p-dimethylaminophenyl-

carbamide, and its derivatives, A., II, 107. N'-cycloHexyl-N-p-dimethylaminophenylcarbodi-imide, A., II, 107.

N'-cycloHexyl-N-p-dimethylaminophenylthio-carbamide, A., II, 107.

a-cycloHexyl- $\delta\theta$ -dimethyl- $\Delta\gamma\eta$ -decadienoic acid, and its ethyl ester, A., II, 99.

a-cycloHexyl-δθ-dimethyl-n-decoic acid, A., II,

4-cycloHexyl-2:6-dimethylphenol, A., II, 193. N-cycloHexyl-N-ethylsulphamic acid, sodium salt, A., II, 158.

9-cyclo Hexylfluorene-9-carboxylic acid, and its β -diethylaminoethyl ester, hydrochloride, A., II, 16.

cycloHexylgeranylacetic acid, A., II, 99.

cycloHexylgeranylmalonic acid, diethyl ester. a-Carbethoxy-a-cyclohexyl-δθ-dimethyl-Δγη-n-decadiencie acid, ethyl ester.

N-cycloHexyl-d-glucamine, A., II, 38. n-Hexylhexahydropyrimidine, A., II, 324. cycloHexyl-n-hexylamine hydrochloride, A., II, 183.

a-cycloHexyl- β -p-hydroxyphenylpropionic Ā., II, 259.

3:3'-n-Hexylidenebis-4-hydroxycoumarin, and its dimethyl ether, A., II, 166.

 γ -cycloHexylidene- β -methyl- Δ^{α} -propene, A., II, 153.

2-N-cycloHexyl-N-methylaminomethylcyclohexanone, ethylene ketal of, A., II, 34.

cycloHexylmethylcyclohexane, A., II, 124. N-cycloHexyl-N-methylsulphamic acid, A., II, 158.

1-n-Hexylcyclopentanol, 3:5-dinitrobenzoate, A., II, 219.

o-cyclo Hexylphenol, dinitro-, determination of, Č., 138.

p-cyclo Hexylphenol, 3:5-dinitrobenzoate of, A., II, 257.

2-(p-cycloHexylphenyl)cinchonic acid, A., II, 379. 5-cycloHexyl-5-phenylhydantoin, A., II, 348.

a-cycloHexyl-β-phenylpropionic acid, A., II, 259. 2-(p-cycloHexylphenyl)quinoline, and its picrate, A., II, 379.

1-cycloHexylpyridinium chloride, I:2'-oximino-, A., II, 372.

n-Hexylsulphamic acid, sodium salt, A., II, 158. cycloHexylsulphamic acid, and its salts, A., II,

9:9-spirocycloHexyl-3:4-tetrahydrobenzfluorene, and its isomeride, and their picrates, A., II, 215.

a-cycloHexyl-a-p-xenylacetic acid, and its ester hydrochlorides, and a-hydroxy-, A., II, 15.

1-Hexyne, condensation of, with af-unsaturated ketones, A., II, 177.

Hibiscetin, synthesis of, A., II, 271.

Hibiscie acid, constitution and detection of, A., II, 120.

Hibschite, formula of, A., I, 294.

Hips, arthritis of hypertrophic, A., III, 157. dislocation of, pseudocongenital, in infants, A., III, 385.

Hippuric acid, in milk, A., III, 112.

Hippuric acid, o-iodo-, sodium salt, absorption of, from rumen of lambs, A., III, 34.

Hiptagenic acid, A., II, 73.

Hirschsprung's disease, dolichocolon and, A., III. 657.

Histaminase, activity of, in normal and toxemic pregnancy, A., III, 738.

Histamine, antibodies to, induced by histamine conjugates, A., III, 280. compounds of, with amino-acids, pharmacology

of, A., II, 83; III, 211. decomposition of, by bacteria, A., III, 696.

detection of, in blood and tissues of Trichinella spiralis infected guinea-pigs and rats, A., III, 428.

in liver extracts, C., 176.

effect of, inhibition of, by arginine, histamine, and histidine compounds, A., III, 681. by imino-compounds, A., III, 81. on gastric secretion, A., III, 473.

in rats, A., III, 345.

in nervous tissue, A., III, 18.

injection of, into brachial artery, effect of, on capillary permeability of arm and hand, A., IIÎ, 526.

intestinal action of, influence of amino-acids on, in guinea-pigs, A., III, 494. muscle. See under Muscle.

reaction of, with histaminase, in presence of catalase and peroxidase, A., III, 766.

release of, from blood cells, effect of trauma on, A., III, 452.

sensitivity to, and anaphylaxis, A., III, 153. tissue content of, effect of adrenal cortical deficiency on, in rats, A., III, 186.

tolerance to, A., III, 681.

use of, in allergic conditions, A., III, 557. Histidine, effect of, on nitrogen excretion in dogs given amino-acid mixtures intravenously, A., III, 274. mctabolism of. See under Metabolism.

oxidative, decomposition of, by rat liver extracts, A., III, 51. reaction of, with formaldehyde, A., II, 379.

with iodine, catalysed by citrate and phosphate buffers, A., I, 158.

urinary excretion of, effect of vitamin-B on, A., III, 752.

Histidine-decarboxylase. See under Decarboxylase. Histology, apparatus for transfer of material in,

C., 194. device for transferring material in, without handling, A., III, 714.

Histoplasma capsulatum, disease due to, A., III, 693.

Histoplasmosis, A., III, 693. Darling, A., III, 821.

with autopsy, A., III, 525. in infant, A., III, 504.

Hodgkin's disease, incidence and prognosis of, A., III, 821.

lymphogranulomatous lesions in bone marrow in, A., III, 323.

Hollandite, relation of, to coronadite and cryptomelane, A., I, 135.

Homarus americanus, blood- and musclephosphorus and moult cycle of, relation between, A., III, 117.

sex dimorphism in, A., III, 592.

Homatropine, activity of, compared with atropine, l-hyoscyamine, and hyoscine, A., III, 832.

Homocamphor, preparation of, from camphor, A., II, 268.

Homocamphor, 3:4-dibromo-, A., II, 268.

Homocamphoric acid, a-amino-, A., II, 332. dl-Homocysteine hydantoin, A., II, 309.

Homocystine, synthesis of, A., II, 250.

Homocystine hydantoin, A., II, 309.

Homology, analogy and, A., III, 89.

dl-Homomeroquinene, and its carbamide derivative, A., II, 314.

Homomeroquinme, and its derivatives, synthesis of, A., II, 86.

Homophthalhydrazide, A., II, 370.

Homophthalhydrazide, 4-amino-, and its N⁴-acetyl derivative, A., II, 371.

Homophthalimide, N-amino-, and its N'-acetyl derivative, A., II, 371.

alloHomo-ω-pregnane-3(β):17(a)-diol, 3-acetate, A., II, 141.

 $allo Homo-\omega$ -pregnane-3(β):17(a):20:21:22pentaols, and their derivatives, A., II, 141.

alloHomo- ω -pregnane- $3(\beta)$:17(a):22-triol, 3:22-diacetate, A., II, 141.

alloHomo- Δ^{20} - ω -pregnene- $3(\beta)$:17(a):22-triol, and its 3:22-diacetate, A., II, 140. alloHomo- Δ^{20} - ω -pregnine- $3(\beta)$:17(a):22-trioI,

and its 3:22-diacetate, A., II, 140.

Homosulphonamides, treatment Clostridium infections in mice, A., III, 606. Homoveratric acid, methyl ester, A., II, 262.

Honey, antihemorrhagic activity of, A., III, 49. vitamin-B in, A., III, 44.

Hoof, powdered, proteins of, cystine content and enzyme digestibility of, A., III, 415. Hookworm. See Ancylostoma caninum.

Hops, analysis of, C., 79.

dried, spent, value of, in rat diet, A., III, 600.

Hordeum jubatum, seeds, hybrid, with Secale cereale, A., III, 852.

Hordeum sativum, embryos, A., III, 308.

Hormones, adrenocorticotropic, bioassav of, A., III, 342.

et of, on anterior pituitary adrenalectomised rat, A., III, 732. effect on rat pituitary, A., III, 408. inhibiting effect of, on growth in male rats,

A., III, 188.

adrenotropic, effect of, on adrenal-ascorbic acid and -cholesterol, A., III, 591. on insulin content of rat's pancreas, A.,

III, 466. on thymus and lymph nodes in rate, A.,

III, 342. and their application to manufacture of

glandular products in India, A., III, 652. androgenic, in gynæcology perlingually administered, A., III, 33.

effect of, on choline-esterase activity and muscle contraction, A., III, 100.

on growth in children, A., III, 188. prolongation of, by zinc in man, A., III, 60. excretion of, during menstrual cycle, A., III,

734. in artificial menopause, A., III, 734. fat-soluble, vehicle for injection of, A., III,

652. follicle-stimulating, test for, in urine as diagnostic aid, A., III, 538.

248 Hormones, gonadotropic, effect of, on intraocular prostatic implants in male rabbit, A., III, 31. equine, treatment with, A., III, 471. excretion of, by prepuberal and adolescent girls, A., III, 191. use of Xenopus as assay animal for, A., III, gonadotropic and thyrotropic, effect of, on phosphatase content of rat femurs, A., III, 29. growth, action of, on osseous system, antagonism of adrenocorticotropic adrenocorticotropic hormone to, in rats, A., III, 732. hypoglycemic effect of, A., III, 733. treatment with, A., III, 187. in arthropods, A., III, 406. in crustacca, sources and activities of, A., III, 652. in relation to achromotrichia, A., III, 824. lactogenic, content of, in anterior pituitary of pigeon, A., III, 29. cestrogenic, reproductive capacity of rat treated prepuberally with, A., III, 110. treatment with, of hyperthyroidism, A., III, pituitary. See under Pituitary. plant, effect of, on tumour growth, A., III, 480. production of, by placental cells in continuous culture, A., III, 190. sex, A., II, 264. biochemical effects of, on phosphatase activity, calcium and phosphorus, A. III, 737. effect of, on bursa of Fabricius and pelvis in pheasant, A., III, 736. on erythrocyte count in domestic fowls, A., III, 111. excretion of, by monkeys, A., III, 467. female, A., III, 253. male, effect of, on eunuchoidism, A., III, 412 male behaviour of female rat injected with, A., III, 345. relation between enzymes and, A., III 253. steroids and, A., II, 52, 105, 106, 140, 229, 230, 259, 266, 282, 343. sterols and, A., II, 196. synthesis of substances related to, A., II, 136, 265. treatment with, of angina pectoris and peripheral vascular disease, A., III, 328. steroid, absorption of, from oral mucous membranes, A., III, 737. action of, in ovipositor test, A., III. 537, 738. mammary glands of. physectomised rats, A., III, 342. failure of; to prevent thyroid enlargement in rats fed thiourea, A., III, 728. lymphoid tumours in mice treated with, A., III, 662, metabolism of, A., III, 730. studies of, in presence of chorioepithelioma and hydatidiform mole, A., III, 411. thyroid. See under Thyroid. thyrotropic, effect of, on blood-magnesium partition, A., III, 524. on thiouracil storage in thyroid, A., III, 653. treatment with, of pituitary disturbances, A., III, 251. vitamins and, synthetic evaluation of, A., III, 198. Horn-fly. See under Flies. Hornblende, fusion of, with fluorides, A., I, 70. Horses, breeding in, ascorbic acid in relation to,

A., III, 355.

699.

vitamin-B requirement of, A., III, 602.

Hospital dusts. See under Dusts.

Hospitals, wards in, children's, prevention of cross-infection in, A., III, 695.

Hospital staff, infection of, by protozoa, A., III,

hæmolytic streptococci in dust of, A., III,

Humerus, pneumatisation of, yolk æstrogen in relation to, in chicks, A., III, 594. Humic acids, peptisation of, by solutions, A., I, 201. Humidity cabinet, for corrosion testing, C., 202. Humulon, purification and properties of, A., II, Humus, colloids of, light absorption and particle size in, A., I, 61. combustion of, catalytic, C., 67. Hutia, Cuban. See Capromys nana. Hyacinthus, chromosome balance and interaction in, A., III, 628. Hyaluronidase, activity of, in relation to virulence of hæmolytic streptococci, A., III, 774. measurement of, C., 186. formation of, by hæmolytic streptococci, A., III, 509. by pneumococci, A., III, 698. Hydantoius, A., II, 349. constitution and hypnotic action of, A., II, 348.derivatives, metabolism of. Metabolism. of sulphur-containing amino-acids, A., II, 309. Hydantoin-5-propio-1-lactam, and its acetyl derivative, A., II, 309. Hydantoin-5-propionic acid, dehydration of, A., II, 309. Hydatidiform mole, diagnosis of, pregnancy test in, A., III, 470. hormone studies in presence of, A., III, 411. Hydranencephaly, A., III, 725. Hydrangea macrophylla, flowers, effect of aluminium on colour of, A., Ill, 312. Hydrarthrosis, knee-joint. See under Kneeioints. Hydrazine, crystal structure of, A., I, 31. reaction of, with 4-chloroquinaldine, A., IJ, 201. synthesis of, in electrical discharge, A., I, 20. Hydrindene, 5-hydroxv-, and its derivatives, A., II. 98. 5-Hydrindenylmalonic acid, diethyl ester, A., II 330. β-5-Hydrindenylpropionic acid, A., II, 330. 1-Hydrindone, 5-hydroxy-, acetate, A., II, 226. synthesis Hydroacridones. of, and dehydrogenation, A., II, 379. Hydroanthracenes, A., II, 254. Hydrocarbons, acetylenic, formaldehyde derivatives of, A., II, 29. adsorption of, by alumina, A., I, 82 by analcite and chabazite, A., I, 170. aliphatic, branched chain, catalytic aromatisation of, A., II, 357. aliphatic and aromatic, liquid, spectra of, infra-red, A., I, 141. alkylation of, catalytically, A., I, 288. analysis of, by infra-red spectroscopy, C., 20. aromatic, A., II, 364. alkylation of, with hydrogen chloride as catalyst, A., II, 362. carcinogenic activity of. See Carcinogenies. determination of, in white spirit, C., 20. mixed, analysis of, adsorption, C., 164. C22, one-, two-, and three-nuclear, syntheses of, A., II, 41. carcinogenic. See under Carcinogenics. catalytic dehydrogenation of, A., II, 117. determination of, C., 20. electrophoresis of, A., I, 15 equilibria of, A., I, 154, 177. ethylenic, spectra of, absorption, infra-red, and structure, A., I, 236. fluorescence of, effect of naphthacene on, A., in presence of oxygen, A., I, 3. gaseous, analysis of, by adsorption fractionation, C., 20. diffusion of, through rubber membranes, A., I, 223; C., 203. energy in flames of, A., I, 64. halogenated, determination of, in atmosphere,

their

Hydrocarbons, halogenated, unsaturated, as anæsthetics. See under Anæsthetics. toxic effects of, in mice and rats, A., III, 556. volatile, determination of, in blood, C., 174. higher, thermal decomposition of, A., I, 106. light, thermodynamics of, A., I, 169. mixed, analysis of, by means of acetoacetic ester equilibrium, C., 21. volatile, (P.), C., 20. open-chain, dehydrogenation of, catalytically, A., I, 66. optical study of, A., I, 236. paraffin, density and transition points of, A., I. 148. higher, physical properties of, A., I, 168. hyperconjugation in, A., I, 119. isomerisation of, catalytic, A., I, 108. studied by Raman spectra, C., 117. oxidation of, catalysis by ozone of, A., I, parachors of, A., I, 214. spectra of, A., I, 236. polycyclic, fæcal excretion of, after their administration in rats, A., III, 203. polymerisation of, catalyst activity for, A., I, 131. polymethylenic, isomerisation of, in presence of aluminium chloride, A., II, 252. precursors of, acid-decomposable, urinary excretion of, after polycyclic hydrocarbon administration, A., III, 120. reactions of, with sulphur dioxide-chlorine mixtures and with sulphuryI chloride, A., I, 206. spectra of, infra-red, A., I, 264. Raman, A., I, 117. structure and viscosity of, A., I, 101. surface tension of, A., I, 245. synthesis of, Friedel-Crafts, A., I, 158. with aluminium chloride and gallium chloride, A., II, 293. from carbon monoxide and hydrogen, energy equations for, A., I, 282. transformations of, at a vanadium contact, A., II, 153. unsaturated, isocyclic, viscosities of, A., I, 122. Hydrochloric acid. See under Chlorine. Hydrocyanic acid. See under Cyanogen. Hydroisoduroin, A., II, 334. Hydrofluoric acid. See under Fluorine. Hydrogen, adsorption of, on nickel plates, A., I, atomic, polymerisation with, A., I, 255. reactions of, with propylene, A., II, 89. collisions of, with alkali-metal ions, A., I, 73. diffusion of, through iron, A., I, 81. equilibrium of, with palladium, hysteresis in, A., I, 58. flames, combustion and isotope separation in, A., I, 67. hydroxyl in, A., I, 179. ignition of, mixed with argon and oxygen, A., I, 179. under ions, concentration of, in relation to absorption, A., I, 200. determination of, C., 50. and control device, (P.), C., 204. and control of value in solutions, (P.), C., 50. in biological fluids, apparatus for, C., 76, 141. indicator for, C., 94. meters for, (P.), C., 204. potentiometrically, A., I, 153. discharge of, A., I, 18. theory of, A., I, 178, 283. exchangers for, properties of, A., I, 278. mobility of, in aqueous solutions, A., I, 156. in dioxan-water mixtures, A., I, 156. negative, absorption coefficient of, A., I, 49. radii of, A., I, 238. isotopes, interchange of, with complex salts, A., I, 19. liquefier for, and helium, C., 48. molecules, forces between, A., I, 4. overvoltage of, A., I, 18. reaction of, with lithium phenyl, A., II, 207. in relation to electrode material, A., I, 64.

Hydrogen, photo-excitation in, by casium ions, A., I, 73.

reaction of, with acctylene, metal-catalysed, A., I, 254.

with nitric oxide, mercury-sensitised, A., I, 132.

solubility of, in palladium, A., I, 81.

spectrum of, continuous, theory of, A., I, 264. thermodynamics of mixtures of, hydrogen, A., I, 127.

Hydrogen chloride. See Hydrochloric acid under Chlorine.

cyanide. See Hydrocyanic acid under Cyanogen.

fluoride. See Hydrofluoric acid under Fluorine.

peroxide, crystal structure of, A., I, 31. decomposition of, by potassium ferricyanide, A., I, 205.

determination of, in presence of per-salts, C., 110.

potentiometrically, C., 11.

effect of, on isolated frog's heart, A., III,

reactions of, with vanadium oxides, A., I, 108.

reduction by, accelerated by iron, A., I, 107.

sulphide, action of X-rays on, A., I, 181. detection and control of, apparatus for, C., 160.

dispersion and refraction of, A., I, 237. formation of, by intestinal bacteria, A., III,

generators for, C., 205.

oxidation of, by chromates, A., I, 291. poisoning by. See under Poisoning. reaction of, with permanganates, A., I, 232.

with sulphur dioxide, A., I, 19. catalysed by silver sulphide, A., I, 227. solubility of, in hydrochloric acid, and Setschenov's rule, A., I, 277.

disulphide, constitution and Raman spectrum

of, A., I, 52. Hydrogen determination :-

determination of, by combustion, C., 195. apparatus for, C., 19. exchangeable, in soils, C., 89. gas analyser for, C., 48; (P.), C., 57.

replaceable, C., 19. Hydrogen electrodes. See under Electrodes.

Hydrogen linkings, A., I, 119, 149, 166. and electrolytic conductivity, A., I, 87. model for, A., I, 268.

polarography of, A., I, 129. Raman effect and, A., I, 165.

Hydrogenation, catalytic. See Catalytic hydrogenation. semi-micro-, C., 19.

Hydrogenation-dehydrogenation, of ammonoaldehydes, ammono-acetals, and aquoammono-aldehydes, A., II, 278.

Hydroindazolone, derivatives, as analgesics, A., II, 60; III, 212.

Hydrolysates, determination of, iodometrically, C., 166.

Hydrometers, (P.), C., 53. testing of, C., 144.

Hydro-orotic acid, 5-chloro-5-bromo-6-hydroxy-, A., II, 171.

5:5-dichloro-6-hydroxy-, A., II, 171. Hydrophenanthrenes, A., II, 254. Hydrophthalmos, congenital, heredity of, A., III, 583.

Hydrophytes, halophytes, and xerophytes, A., III, 227.

Hydroquinines, 10-iodo-, A., II, 87.

Hydrothorax, and ascites in association with ovarian fibroma. See Meigs' syndrome.

a-Hydroxy-acids, rotation dispersion of, A., I,

β-Hydroxy-acids, aliphatic, A., II, 151. y-Hydroxy-acids, carboxylic, glucosides of, A., II, 186.

polyHydroxyamines, A., II, 323.

N-Hydroxy-a-amino-acids, as intermediates in oxidation of a-amino-acids, A., II, 296.

Hydroxyapatite, A., I, 92.

behaviour of, in serum and other fluids, A., III: 525.

Hydroxy-compounds, interaction of, with phosphorus and thionyl halides in absence and presence of tertiary bases, A., II, 150.

Hydroxy-ketones, aromatic, preparation of, A., II, 48.

Hydroxyl ions, in flames, A., I, 19, 179.

Hydroxylamine, determination of, in root nodules, C., 139.

photographic development by, A., I, 67. photolysis of, A., I, 158. reactions of, A., I, 42.

Hydroxylamine-o-sulphonic acid. amination with, A., II, 330.

Hygiene, organisation of, in El Alamein victory, 1942, 'A., III, 745. See also Health.

Hygrometers, humid fatigue of, C., 202.

Hymenolepis nana var. fraterna, infection by, immunisation against, A., III, 566.

Hymenopteron, parasitic. See Telenomus fariai. Hyoid, region of, in insectivora, A., III, 569. Hyomandibular of Eusthenopteron, A., III, 26.

Hyoscine, activity of, compared with atropine, l-hyoscyamine, and homatropine, on smooth muscle, A., III, 832.

Hyoscyamine, synthesis of, in plants, A., III, 312.

l-Hyoscyamine, activity of, compared with atropine, hyoscine, and homatropine, on smooth muscle, A., III, 832.

Hyoscyamus, extracts, analysis of, C., 36. Hyoscyamus niger, blossom formation initiated by respiration inhibition, A., III,

Hypaphorine, and its flavianate, A., III, 856. Hyperadrenalism, genital response to, in female rats, A., III, 465.

Hyperbilirubinæmia, in gastrointestinal disease, A., III, 193.

Hypercalcæmia, production of, with vitamin-D, A., III, 753.

Hypercholesterolæmia, effect on, of lecithin feeding, A., III, 524.

Hypergalactosæmia, chronic, A., III, 240. Hyperglobulinæmia, A., III, 9.

incidence of, lymphogranuloma venereum infection in relation to, A., III, 635.

Hypericin, and its benzoates, A., II, 300. in Hypericum perforatum, A., III, 708.

Hypericum perforatum, hypericin from, A., II, 300; III, 708.

pigments from, A., III, 232. Hyperinsulinism, electroencephalography of, A., III, 801.

Hyperparathyroidism, diagnosis of, A., III, 652. in Middle Western States, A., III, 250.

Pagetoid bone changes in, postoperative acidosis and, A., III, 407.

Hyperphagia, relation of area 13 on orbital surface of frontal lobes to, in monkeys, A., III,

Hyperplasia, endometrial, with uterine fibroids and external endometriosis, incidence of, A., III. 812.

Hyperpnœa, during muscular exercise, reflexes from limbs as factor in, A., III, 244.

Hyperpyrexia, effect of, on survival time of dogs in hæmorrhagic shock, A., III, 720. electrocardiographic changes after, A., III,

637.Hypertensin, action of, on rat blood pressure, A., III, 576.

Hypertension, A., III, 641.

after removal of renal calculus, A., III, 457. antipressor action of o-quinonoid adrenaline derivatives in, in rats, A., III, 16.

arterial, essential, tubular resorption of chloride in, A., III, 106.

arteriolar lesions in, A., III, 174.

glomerular filtration rate, renal blood flow, and tubular excretory mass in, A., III, 37.

role of brain stem in, after intracranial pressure increase, A., III, 641. treatment of, thiocyanates in, A., III, 244.

Hypertension, biology of, A., III, 641.

blood pressure in, arterial, and urea clearance, effect of dietary protein on, A., III, 413. effect of vitamin-K preparations on, in rats, A., III, 527.

capillary fragility in relation to, A., III, 457.

diodrast and inulin clearance by kidney in, effect of dietary protein on, A., III, 414. experimental, A., III, 99.

effect of pregnancy on, A., III, 720. heart and, A., III, 14.

in one of identical twins, A., III, 328. in people over 40, A., III, 174.

induced, in parabiotic rabbits, A., III, 397. malignant, splanchnicectomy in, A., III, 799.

neurogenic, effect of xyloquinone on dogs with, A., III, 577. nutritional, renal pathology of, in rats, A.,

III, 475.

posteclamptic, eclampsia and, A., III, 328. post-partum, unexpected, A., III, 720.

post-toxemic, factors associated with, A., III,

prognosis in, A., III, 100.

prothrombin time in, in relation to cerebral accidents, A., III, 324.

renal, lesions similar to those of, produced by deoxycorticosterone, A., III, 14. phenol-red excretion and renal blood flow in,

A., III, 413. treatment of, with renal extracts, A., III,

720. with vitamin-A concentrates, A., III,

100. urinary antidiuretic principle excreted in, in dogs, A., III, 258.

renal blood vessels in, A., III, 174.

renin in relation to, in man, A., III, 576. thoracolumbar sympathectomy in, A., III, 526.

treatment of, with nephrectomy, A., III, 540. with thioevanates, goitre during, A., III,

thrombophlebitis during, A., III, 527. with vitamin-A concentrate, A., III, 244. with polyuria in rats, A., III, 328.

See also Blood pressure, Hypotension, and Thyroid.

Hyperthermia. See Hyperpyrexia. Hyperthyroidism, at menopause, A., III, 807. diarrhœa of. See under Diarrhœa.

effect of, on genital structure and function, A., III, 734.

effect on, of thiamin, A., III, 45. electrocardiograph findings in, A., III, 456.

gastrointestinal tract in, A., III, 727. in pregnancy, A., III, 406.

liver function, pulse rate, and temperature in, in dogs, A., III, 107. treatment of, with cestrogenic hormones, A.,

III, 807.

with thiouracil and thiourea, A., III, 185. tremor in, and its diagnostical value, A., III, 339.

See also Hypothyroidism and Thyroid.

Hypertonicity, body-water distribution and cause of death in, A., III, 325.

Hyperventilation, effect of, on cerebral cortex, A., III, 645.

role of, in diagnosis, production, and treatment of anxiety symptoms, A., III, 100. Hypervitaminosis-A, carotenæmia and, A., III,

Hypervitaminosis-D, calcium content of soft

tissues in, in rats, A., III, 272. Hypnosis, barbiturate, effect on, of malonate and

succinate, A., III, 760. Hypnotics, cycloheptenylethylbarbituric acid, A., III, 59.

toxicity of, as affected by adrenalectomy, temperature, and thyroxine, A., III, 361.

Hypo. See Sodium thiosulphate. Hypoalbuminæmia, effect of venoclysis with amino-acids during, A., III, 12.

Hypochloræmia, treatment of, A., III, 718. Hypochlorites. See under Chlorine.

Hypochlorous acid. See under Chlorine.

Hypoglycæmia, abdominal pain due to, A., III, 12.

due to islet adenoma of pancreas with surgical cure, A., III, 27.

effect of, on acetylcholine level in rat cerebral cortex, A., III, 179.

on survival period of infant and adult rats and cats, A., III, 12.

electroencephalography of, A., III, 801.

insulin. See under Insulin.

treatment of, with pancreatectomy, A., III, 807.

Hypogonadism, treatment of, with testosterone, sublingually, A., III, 473.

Hyponitrites. See under Nitrogen.

Hypoparathyroidism, idiopathic, associated with moniliasis, A., III, 464.

in pregnancy, treatment of, with dihydro-

tachysterol, A., III, 807. Hypophosphites. See under Phosphorus.

Hypophosphoric acid. See under Phosphorus. Hypophysectomy, body weight, food consumption, and serum-albumin concentration after, in rats, A., III, 108.

effect of, on liver-arginase activity in rats, A., III, 108, 252.

effect of intraperitoneal injection of glucose on rats after, A., III, 29.

food and tissue composition after, A., III, 808. ovulation production after, in rats, A., III, 33.

parathyroid function in rats after, A., III, 251.

partial, in women, A., III, 408.

work performance of rats after, effect of adrenocorticotropic hormone on, A., III, 733.

Hypophysis. See Pituitary.

Hypopituitarism, chronic, hypothalamic obesity produced in rats with, A., III, 536.

Hypoproteinæmia, dietary, recovery from plasma-amino-acid reversibility of retention during, in dogs, A., III, 197.

treatment of, protein metabolism in relation to, A., III, 392.

with ædema, induction of, A., III, 634.

Hypoprothrombinæmia, after administration of indanedione derivatives, A., III, 575.

after salicylate administration in man and rabbits, A., III, 10.

effect on, of l-ascorbic acid in guinea-pigs, A., III, 324.

of stored citrated blood transfusions, A., III, 392.

idiopathic, A., III, 392.

liver infarction and, A., III, 256.

prevention of, vitamin-K substitute for, A., III, 635.

Hypotension, and loss of pressor response to angiotonin, after trauma to central nervous system and hæmorrhage, A., III, 99. emorrhagic, effect in, of po

hæmorrhagic, potassium phosphate intracisternally injected in dogs, A., III, 17.

reactions of aorta in, A., III, 244.

survival time in, effect of pectin and saline solutions on, in dogs, A., III, 720.

See also Blood pressure, Hypertension, and Thyroid.

Hypothalamus, body temperature in relation to, A., III. 179.

region of, effect of focal destruction of, on blood-sugar, A., III, 179.

Hypothermia, effect of, A., III, 262.

on survival time of dogs in hæmorrhagic shock, A., III, 720.

in infections, A., III, 71.

induction of, in rats, A., III, 541.

survival in, by dogs, A., III, 817.

Hypothyroidism, congenital, mental and physical development of children with, and its treatment, A., III, 652.

in monkey, A., III, 728. mild, prevalence of, with normal metabolic rate, A., III, 26.

radioactive iodine studies in, in childhood, A., III, 250.

See also Hyperthyroidism and Thyroid.

Hysterectomy, effect of, in infantile rat on adult ovary, A., III, 409.

gonadotropin excretion after, in women, A., III, 33.

relaxation of pelvic ligaments induced by progesterone after, in castrate guinea-pigs, A., III, 345.

Hysteresis, capillary theory of adsorption and, A., I, 123.

in rheonomic systems, A., I, 202.

of rotational transformations, A., I, 264. Hysteresograph, torsion, C., 150.

Hysteria, treatment of, w intravenously, A., III, 683. with barbiturates,

Hysterosalpingography, in diagnosis and treatment of sterility, A., III, 32.

I.

Ibogaine, spectrum of, absorption, ultra-violet,

A., I, 212.

Ice, Kungur cave, Urals, properties of, A., I. 69.

Ichthynone, and its derivatives, A., III, 708. Ichthyomethia piscipula, fish poisons from, A., III, 708.

Ichthyopterin, A., II, 84.

Icterus. See Jaundice.

Idiocy, amaurotic, juvenile, familial, and its ocular pathology, A., III, 804.

Heocecal valve, variations and incompetency of, A., III, 89.

Heum, atresia of, congenital, A., III, 113.

reoma of, melanotic, susception, A., III, 263. sarcoma causing intus-

Ilex paraguariensis, theobromine in, A., III,

Ilmenorutile, Sierra Leone, A., I, 208. Imbecility, phenylpyruvic, phenyl-lactic and phenylpyruvic acids from urine in, A., III,

180. Iminazoles. See Glyoxalines.

2-Iminazolylpyruvic acid, hydrochloride and 2:4-dinitrophenylhydrazone, A., II, 289.

Imino-compounds, inhibition by, of anaphylaxis and histamine contraction, A., III, 81. Immersion foot, atiology of, A., III, 719.

treatment of, by dry cooling, A., III, 14.
Immunisation, adjuvants in, acid-fast bacilli and paraffin oil as, A., III, 850.

in cities, A., III, 80. Immunity, alteration in, of organisms during metamorphosis, A., III, 711.

antithrombin, and reticuloendothelial system, relation between, A., III, 523.

obtained with transmissible fowl tumour, A., III, 747.

Immunochemistry, A., III, 226.

Immunology, chemistry and, A., III, 304.

Impetigo contagiosa, treatment of, with sulphathiazole, A., III, 133.

Impinger, glass, midget, C., 207.

Inanition, nutritional requirements in, A., III,

Indane, derivatives, ring enlargement of, A., II, 194.

Indane, 5-hydroxy-, synthesis of, A., II, 75. 2-Indanone cyanohydrin, A., II, 194.

Indanthrone, structure of, and its derivatives, A., II, 310.

5-Indanyloxyacetic acid, A., II, 132.
6-Indanyloxyacetic acid, 1-amino-, and iderivatives, and 1-hydroxy-, A., II, 132. and its

Indene, derivatives, A., II, 340. æstrogenic, synthesis of, A., II, 129.

tautomerism of, A., II, 131. Indenes, polyarylated, A., II, 124.

Indene-1-carboxylic acid, β -diethylaminoethyl ester, hydrochloride, A., II, 16.

5-Indenyloxyacetic acid, and its ethyl ester, A., П, 132.

6-Indenyloxyacetic acid, A., II, 132. Indians, Lacandone, of Southern Mexico, A., III,

236. Indicators, for determination of soil acidity, C.,

Indicators, mixed, for fatty acid titration, C.,

redox, acid, oxazine series, A., II, 313.

Indigo, structure of, and its derivatives, A., II, 310.

Indigotin, benzoylated derivatives of, A., II, 81.

Indium, and its derivatives, physiological properties of, A., III, 761. density and thermal expansivity of, A., I,

148. isomerisation of, by electron impact, A., I,

263.

isotopes, metastable, excitation of, to indicate "Bremsstrahlung," A., I, 161.

Indium alloys, with zinc, A., I, 244.
Indium salts, reaction of, with potassium chromate, A., I, 158.

Indium ores, in metallogenic cycles, U.S.S.R., A., I, 48.

prospecting evidence for, A., I, 48.

Ùral, A., I, 48.

Indolacylpyridinium salts, fission of, by alkalis, A., II, 237.

Indole, detection of, by means of xanthhydrol,

synthesis of, A., II, 23, 271

thio-compounds of, A., II, 239.

Indoles, synthesis of, boron fluoride as condensing agent in, A., II, 170.

N-Indole-2-carboxyl-N-methylalanine, A., II, 311.

Indole-2-carboxylmethylamide, and its picrate, A., II, 311.

Indole a-ketoaldonitrones, A., II, 237.

β-Indolemethylene group, synthesis of, compounds containing, A., II, 234.

See 2:2'-Pyridylindole, Indolone hydrate. 1:3-dihydroxy-.

Indoloneindoxyl, and its picrate, A., II, 278.

Indolylacetic acid, effect of, on bean plants, A., III, 86.

3-Indolylacetic acid, detection and determination of, in organic manures, C., 40. determination of, C., 23.

effect of, on enzyme action, A., III, 288. gall formation by, in tomato root cultures, A.,

III, 855. 3-Indolylbutyric acid, detection and determination of, in organic manures, C., 40.

Indolylglyoxal, bisaniline derivative of, A., II, 237. 3-Indolylpropionic acid, detection and determin-

ation of, in organic manures, C., 40. β -3-Indolylpropionic acid, α -amino-, α -acetyl derivative, A., II, 274.

2:4-dinitrophenyl-2-Indolylpyruvie acid. hydrazone, A., II, 289.

Indones, 2:3-disubstituted, A., II, 163.

Industry, nutrition in, A., III, 264. Infants, breast-fed, calcium and phosphorus absorption by, in relation to rickets, A., III, 675.

cereal-thickened milk formula for, in breast milk deficiency, A., III, 123.

congenital defects in, death from, after maternal rubella during pregnancy, A., III, 817.

feeding of, evaporated milk without sugar for, A., III, 483.

in relation to mortality in Belfast, A., III, 264.

with Iactic acid milk, A., III, 264.

negro, weight of, A., III, 712. newborn, aerobic flora of, A., III, 847. maturity and ossification centre develop-

ment of, A., III, 2. vitamin- B_1 excretion in urine of, A., III,

199. of diabetic mothers, cardiac hypertrophy, erythroblastosis, hyperplasia of Langerhans islets, and macrosomia of, A., III, 158.

stillborn, multiple congenital anomalies in, A., III, 235.

Infantilism, congenital webbed neck, and cubitus valgus. See Turner's syndrome. with goitre, diabetes, mental defect, and optic atrophy, A., III, 463.

Infection, air-borne, A., III, 295. bacterial, chemotherapy of, A., II, 279. "focal," vaccine therapy of, A., III, 226. hypothermia in, A., III, 71. in newborn, A., III, 72.

nasal and sinus, treatment of, with sulphonamides, A., III, 359.

post-operative, reduction of, sulphanilamide implantation in wounds for, A., III, 492. pyogenic, treatment of, with emetine, A., III, 279.

respiratory, control of, A., III, 302. surgical, sulphanilamide and its derivatives in, A., III, 428.

use of propamidine in, A., III, 359. treatment of, with penicillin, A., III, 756. trypanosomal, effect of drugs on, A., III, 278. vitamins and, A., III, 222.

Infectious disease. See under Disease. Infertility, male, treatment of with equine gonadotropin, A., III, 737.

See also Sterility. Inflammation, chemical basis of injury in, A., III, 97.

experimental, A., III, 13.

local, site of, gluconeogenesis at, A., III, 275. treatment of, with X-rays, A., III, 284.

Influenza, defence against, A., III, 775. epidemic, lung abscess in, A., III, 698. epidemiology of, A., III, 303.

human, experimental, A., III, 565. prevention and treatment of, with sulphanilamide, A., III, 55.

prophylaxis and treatment of, by inhalation, A., III, 565.

A type, epidemic, A., III, 303. immunisation against, A., III, 303.

virus, active and inactive, interference between A., III, 701.

adsorption of, by respiratory cells, A., III, 225. centrifugation and ultrafiltration of, A.,

III, 776.

concentration and purification of, A., III, 776.

effect on, of chemicals, A., III, 776. of triethylene glycol vapour, A., III, 71. infection by, immunological response to,

A., III, 225. infectivity of, for mice, A., III, 510. killing of, by hypochlorous acid, A., III, 79. Melbourne, persistance of, on hand, A., III,

resistance of, to drying, A., III, 510. protection against, with acridines, anti-biotics, and sulphonamides, A., III, 829.

red blood-corpuscle agglutination test for, A., III, 510.

size of, A., III, 776. skin reaction to, A., III, 702.

stability of, in presence of salts, A., III, 776. strains of, A., III, 151.

survival of, in air, A., III, 225.

swine, synergistic action of, with Hamophilus influenzæ, A., III, 148.

titration of, in chick embryos, A., III, 776. virus A, antigenic composition of, A., III, 776 .

strains of, A., III, 151.

virus B, infection by, immunity in, A., III, 565.

isolation and characterisation of, A., III, 849

virus PR8, formation of, in chick embryos, A., III, 510.

viruses, interference between, A., III, 775. viruses A and B, isolation of, A., III, 620. protection against, by vaccination, A., III, 565.

susceptibility to, of bush and cane rats, A., III, 849.

viruses, A, B, and pig, analysis of, A., III, 702.

Inguinal canal in feetus and new-born, A., III, 625.

Ingninal region, A., III, 709. Inhalation, therapy by, A., III, 215.

Injection, intracutaneous, of cattle, A., III, 843.

Injuries, hysterical sequelæ of, A., III, 582. Inks, printing, testing of, C., 26.

Inoculation of animals, apparatus for, C., 43. Inorganic compounds, pure, preparation of, for spectrography, A., I, 44.Inositol, addition of, to wheat bread, effect of, on

gastro-intestinal tract in dogs, A., III, 270. determination of, C., 42.

in animal tissues, C., 91.

effect of, on alopecia in rats, A., III, 424, 493. in growth and lactation of rats, A., III, 47. lipotropic action of, A., III, 424. in gastro-intestinal cancer, A., III, 350.

hexa-p-nitrobenzoate, A., II, 100.

mesoInositol, effect of, on growth of microorganisms, A., III, 615.

Insects, anaphase movement in, A., III, 521. cuticle of, staining of, dioxan in, A., III, 93. embryogenesis and metamorphosis in, A., III, 4.

flight of, glycogen content during, A., III, 245.

grain-infesting, crowding and fertility in, A., III, 261, 745.

See also Rhizopertha dominica.

muscles of, body temperature and energy production of, A., III, 260.

populations of, growth of, with successive generations, A., III, 787. relation of, to disease and injury in man in

Australia, A., III, 660. reproduction of, dust as inhibitor in, A., III,

348.

sterol requirement for, A., III, 352. vitamin requirement of, intrac symbiosis in relation to, A., III, 672. intracellular vitamin-B-complex requirement of, A., III, 353.

Insecticides, contact, testing of, C., 190. determination in, of arsenic, C., 189. for cockroaches, C., 139. for lice, A., III, 610. organic, structures of, A., II, 36.

testing of, C., 190. toxicity of, A., III, 496.

Insectivora, hyoid region in, A., III, 569. Insemination, artificial, using vaginal diaphragm,

A., III, 594. Insomnia, mild, treatment of, with persedon, A., III, 59.

Inspiratory centre, localisation of, A., III, 20. Institutions, inmates of, bacteriological, dental, and dietetic study of, A., III, 545. Instrumentation, C., 71, 72, 170.

Insulating liquids, electrical conductivity in, A., I, 4.

Insulating materials, testing of, C., 56. Insulating oils, ageing test for, C., 115. oxidation tendency of, C., 165.

Insulin, antagonism between, and posterior pituitary, A., III, 536. assay of, extended cross-over design and its

use in, A., III, 729. bioassay of, by mouse-convulsion test, A., III,

340.

determination of, C., 176.

effect of, in blood-, liver-, and musclephosphate, A., III, 407.

on gastric secretion, A., III, 473.

on glucose tolerance of men, A., III, 729. on phosphatase content of rat femurs, A., III, 29.

on response of frog muscle to acetylcholine, A., III, 724.

fibrous modification of, A., III, 653.

hypersensitivity to, with desensitisation, A., ĬII, 250.

hypoglycemia from, in pigs, A., III, 108. interaction of electric shock and, A., III, 646.

hypoglycæmic activity of, A., III, 407. injected, fate of, A., III, 340.

injection of, blood-sugar response to, effect of dehydration and fasting on, in chicks, A., III. 536.

fat tumefaction after, A., III, 652. lipohypertrophy due to, A., III, 27. mixtures of, A., III, 729.

Insulin, reaction of rabbits to, influence of atmospheric temperature on, A., III, 536. requirement of, effect on, of ascorbic acid, estrone, and testosterone propionate in dogs, A., III, 357., resistance to, A., III, 535, 588.

immunology in, A., III, 536. in guinea-pigs, A., III, 652.

response to, effect of exercise on, in rabbits, Ã., III, 730. secretion of, after higher centre stimulation,

A., III, 455. sensitivity to, in juvenile diabetes, A., III,

tolerance to, effect of diet on, A., III, 108.

treatment with, of diabetes, A., III, 588, 729. of infective hepatitis, A., III, 36. See also Diabetes.

Insulin-protamine-zinc, compared with histonezinc-insulin, and standard protamine zinc insulins, A., III, 250.

modified, A., III, 729. Insulin zinc, crystals, optical constants of, A., II. 356.

Intelligence, season of conception and, A., III, 654.

Interferometers, Fabry-Perot, ghost images and

scatter rings of, C., 148. Interferometry, A., I, 142, 166 C., 148. Intermedin, A., III, 252.

Internists, in the Navy, A., III, 38.

Intervertebral disc, herniated, A., III, 90.

protruded, diagnosis and treatment of, A., III, 90.

Intestines, absorption by, effect of vitamin-B complex deprivation on, in dogs, A., III, 114

of calcium, A., III, 272. of fat, effect of pancreatectomy on, A., III, 412.

effect of quinine on, A., III, 193. relation of phospholipin to, A., III, 595.

of serum-proteins, in guinea-pigs, A.. III, of sugars, effect of atropine, quinine, and

strychnine on, A., III, 192. anastomosis of, invagination method of, A.,

III, 595. concentration of different substances in, effect

of, on their absorption from small intestines, A., III, 114. denervated, motility of, action of anti-

choline-esterases on, A., III, 595. effect on, of adrenaline, abolition of, A., III, 589.

of X-rays, in dogs fed iron compounds, A., III, 497.

flora of, coliform, effect of succinylsulphapyrazine on, in mice, A., III, 277.

in rats on diet containing sulphonamides, A., III, 55.

gas volumes of, at altitude, A., III, 642. helminthic infestations of, treatment of, with phenothiazine in man, A., III, 280.

infections of, treatment of, with sulphon-amides, A., III, 55.

isolated, action on, of nicotine, inhibited by sulphonamides, A., III, 756.

large, ascending, malignant lesions of, A., III, 264.

cancer of, diagnosis of, A., III, 263. distension of, and stimulation of nerve supply, bile flow inhibition after, A., III,

diverticula of. See Diverticula, of colon. indometriona of, A., III, 600.

obstruction of, due to congenital bands, in newborn infants, A., III, 114.

polyposis of, familial, A., III, 193. racial differences in, in natives of Bolivia,

A., III, 572. See also Megacolon, and Microcolon.

loops of, contents and transudate from, toxicity of, A., III, 346. mucosa of, peptidases in, A., II, 290; III,

689. phosphatases of, A., III, 558. surface area of, in cat and rat, A., III, 517.

Intestines, obstruction in, bezoar as cause of, A., III, 657. due to colonic spasm, A., III, 346. due to malrotation, treatment of, A., III, 570. neurogenic factor in, A., III, 255. parasites of, in mental disease, A., III, 222. small, abnormal barium distribution in, vagal and sympathetic innervation in, A., III, 657. effect on, of glyceraldehyde, iodoacetic acid, and phosphorylated compounds, in rabbits, A., III, 34. electrical responses of, in man, A., III, 657. roentgenological pattern of, in infants and children, A., III, 814. secretory function of, effect of parasitic worms on, in dogs, A., III, 595. See also Duodenum, Ileum, and Jejunum. stimulation of circular coat of, site of action of drugs causing, A., III, 193. Intoxication, blood tests to determine, A., III, 215.Intramuscular pressure, See under Blood Inulin, determination of, in blood and urine, step-photometrically, C., 128. in scrum and urine, C., 28. recovery of, from plasma, effect of filtrate pH on, C., 77. Invar, non-oxidisable, properties of, A., I, 242. Invert soaps. See under Soaps. Invertase, heat-inactivation of, A., III, 500. Invertebrates, marine, osmotic pressure and, A., III, 260. Iodates. See under Iodine. Iodides. See under Iodine. Iodination, biological, Schardinger enzyme in, A., III, 558. Iodine, activation cross-section of, for slow neutrons, A., I, 189. content of, in atmosphere, A., I, 256. in thyroid, effect of thiouracil on, A., III, of South Indian animals, A., III, 406. effect of, on cervical sympathetic and vagal ganglia in guinea-pigs, A., III, 188. expansion coefficients and lattice constants of, A., I, 194. in nutrition, A., III, 124. isotopes, radioactive, behaviour of, in resting and stimulated thyroids, A., III, 533. concentration of, in hypothyroidism, A., III, 250. disintegration of, A., I, 76. metabolism of. See under Metabolism. uptake of, by goitrous rat thyroids, A., III. 587. β -rays from, spectrum of, A., I, 114. liberation of, from electrolysis of iodide solutions, A., I, 254. location of, in tissues, autographically, A., III, metabolism of. See under Metabolism. oxidation of sulphur compounds with, C., 64. reaction of, with ketones, in presence of pyridine, A., II, 347.

Hydriodic acid, reaction of, with phenolic pinacols and pinacolins, A., II, 367. with vanadic acid, catalysed by oxalate ions, A., I, 20. with preservative, specification for, C., 196. Iodides, accumulation of, by thyroid in vitro, A., III, 587. conversion of, into di-iodotyrosine and thyroxine by thyroid, inhibition of, A., III, 407, 587, 728. determination of, in presence of chlorides, C., 111. photochemical oxidation of, by stream of oxygen, C., 143. Iodates, activity coefficient of, A., I, 176. determination of, conductometrically, C., in presence of copper, iodometrically, C., 111.

Icdous acid, formation of, A., I, 232.

Iodine determination :determination of, by amperometric titration, in iodinated oils, C., 137. in iodised sodium chloride, C., 32. in iodotannic syrup, C., 87. in organic compounds, C., 19. in solution, from turbidity, C., 13. microchemically, C., 161. protein-bound, in blood-scrum, metrically, C., 174. colorispectrophotometrically, liberated in carbon monoxide oxidation, C., 64. Iodoform, photochemical oxidation of, effect on, of natural inhibitors, A., II, 177. Iodotannic syrup, analysis of, C., 87. Iodous acid. See under Iodine. Ions, activity of, measurement of, device for, (P.), C., 204. adsorption of, in electrical layers, A., I, 102. complex, A., I. 101, 127. binary, dissociation frequency of, in aqueous solution, A., I, 176. dipolar, dielectric properties of, in mixed solvents, A., I, 220. electrostatic hindered rotation in, A., I, 78, 118, 213. free-falling, spatial distribution of, A., I, 162. gascous, heat of hydration of, A., I, 178. hydration of, A., I, 203. in electrolysis, A., I, 176. microscopic, dissociation constants and free energy of, A., I, 249. negative, in Braun tubes, A., I, 162. positive, elementary, dialysis and diffusion coefficients of, A., I, 176. source of, C., 200. Ionic weights, determination of, by dialysis, A., I, 8. Ionisation of strong electrolytes, A., I, 127. Ionium, disintegration of, A., I. 189. Ionone, A., II, 78. Ionones, A., II, 103, 299. determination of, C., 71. spectra of, absorption, ultraviolet, and Raman, A., I, 97. dl-a-Ionone, optical resolution of, A., II, 103. d- and l-a-Ionones, 2:4-dinitrophenylhydrazone, and 1-menthhydrazone, δ-phenylsemicarbazone of, A., II, 103. β -Ionone, phenylsemicarbazones of, A., II, 103. purification of, A., II, 340. Ionosphere, E layer of, origin of, A., I, 187. structure of, in relation to ionic diffusion. A., I, 162. Ionylideneacetic acid, ethyl ester, cleavage of, A., II. 78. Ionylideneacetones, spectra of, absorption, and synthesis, A., II, 261. a-Ionylideneacetone, semicarbazone, A., II, 262. Irgaien, biological properties and chemo-therapeutic effects of, and its action in pneumococcal infections in mice, A., III 278. Iridium, isotopes, y-rays from, energy of. A., I spectrum of, K-absorption, A., I, 233. Iridium salts, complex, A., I, 68. Iridium, sulphite-chlorides, A., I, 90. Iron, cast, adherence of enamels to, test for, C., 113. analysis of, C., 162. spectrographically, C., 14. decarburisation of determination of depth of, C., 14. density of, C., 14. determination in. of copper, by electrolysis, C., 58, 105. of nickel, C., 15. of phosphorus. C., 10. of silicon, C,, 66, 147. testing of, C., 113. catalytic, ammonia decomposition on, A., I, 288. chroming of, A., I, 177. poly-crystalline, hydrogen monoand absorption by, and its expulsion, A., I,

Iron, polycrystalline, magnetisation of, A., I, 271. magnetostriction of, A., I, 196. diffusion of hydrogen through, A., I, 81. equilibrium of, with hydrogen, its oxide, and water, A., I, 37, 104. fabricated, \analysis of, spectrographically, C., 163. grey, type determination of, by means of microstructure, C., 66. high-silicon, acid-resisting, determination in, of silicon, C., 66. magnetic, transmission of thermal neutrons through, A., I, 1. magnetic properties of, in active charcoal, A., I, 100. magnetostriction of, in magnetic fields, A., I, 120.malleable, analysis of, C., 162. molten, carbon-oxvgen equilibrium in, A., I, 63. determination in, of oxygen, C., 13. oxygen-silicon equilibrium in, A., I, 63. oxidation of, by heat, A., I, 206. passivation of, anodic, in chromic-sulphuric acid solutions, A., I, 105. passivity of, A., I, 42. pig, analysis of, C., 14, 65. determination in, of phosphorus and sulphur, C., 11. $K\beta$ rays from, manganese filter for, C., 44. rust on, detection of, C., 65. scrap, analysis of, C., 14, 65. spectrum, lines in, as intensity standards, A., I, 25. ultra-ray impact transmitted from air to, A., I, 76. Iron alloys, determination in, of manganese, C., 13. ferrous, analysis of, spectrographically, C., 112. detection in, of tungsten, C., 111. determination in, of phosphorus, C., 10. with aluminium, copper, and nickel, magnetic properties of, A., 1, 277. with aluminium, manganese, and silicon, A., I, 9. with antimony, A., I, 170. with antimony and cobalt, and with antimony and nickel, A., I, 244. with antimony and nickel, phase transitions in, A., I, 102. structure of, A., I, 272. with carbon and manganese, carbides in, A., I, 276.with copper and nickel, dissociation of, A., I, with copper and silicon, equilibrium of, A., I, 220. with molybdenum and nickel, passivity in, A., I. 198. with nickel, effect of cold-work on, A., I, 34. with nickel and silicon, A., I, 10. with silicon, magnetisation of, A., I, 271. with tin, X-ray structure of, A., I, 195. See also Ferromanganese, Ferrosilicon, Ferrovanadium, and Steel. Iron compounds, absorption of, phytic acid and, A., III, 346. balance of, in pregnant women, A., III, 678.biliary excretion of, influenced by red cell destruction, A., III, 631. dietary allowances of, adequacy of, A., III, 485. excretion of, by man, A., III, 792. non-haem, content of, in tissues of cancer-strain mice, A., III, 748. pathogenesis and effects of, in relation to calcium and phosphorus metabolism, A., III. 606. requirements of, A., III, 353. treatment with, of anæmia in school-children, A., III, 239. with nickel and sulphur, A., I, 177. Iron alum, adiabatic demagnetisation of, A.,

antimonate, niobates, and tantalate, lattice

constants of, A., I, 195.

steel, A., I, 5.

carbides, eutectoid of, effect of various elements on, A., I, 198. nitroso-salts, A., I, 45.

oxides, equilibrium of, with manganese

oxides, A., I, 282.

Ferric ions, complex, magnetic moments of, A., I, 101.

Ferric salts, redox potential of solutions of, A., I, 226.

Ferric perchlorate, reaction of, with mercury ions, effect of catalysts on, A., I, 41. catalytic decomposition

diazonium salts with, A., II, 96. reduction of, by mandelic acid in thorium

phosphate gel, A., I, 132. by stannous salts, A., I, 252.

photochemically, in presence of acetone

and ether, A., I, 205.
in presence of organic acids and sugars, A., I, 88.

hydroxide, colloidal, sols, coagulation of, electrolyte adsorption in, A., I, 83. magnetic properties of, in presence of hydrochloric acid, A., I, 224.

gelation of, pH in, A., I, 84. properties and structure of, in relation to mode of preparation, A., I, 145.

suspensions, electrolysis of, A., I, 130. oxide, determination of, in Portland cement, C., 67.

diffusion of gases into, and its mixtures with alumina, A., I, 35.

effect on, of added oxides at high temperatures, A., I, 68.

equilibrium of, with ferrosoferric oxide, A., I, 85. with manganese sesquioxide, A., I,

260. Ferric oxides, a- and β -forms, crystallography in equilibrium of, with y-ferrous

oxide hydroxide, A., I, 145. Ferrous salts, spectra of, absorption, ultra-

violet, reactions shown by, A., I, 205. Ferrous chloride, heat content of, at high

temperatures, A., I, 8.

hydroxide, crystalline, A., I, 230. sulphate, production of, C., 66.

titration of, with dichromates in presence of oxalates, C., 162.

sulphide, reaction of, with cupric sulphide, A., I, 133.

Ferrites, structure of, A., I, 120.

Ferroferriphosphates, synthesis of ammonium phosphates from, A., I, 292.

organic compounds, complex, porphyrins, oxidation of, by hydrogen peroxide, A., I, 107.

Iron carbonyls, history of, A., I, 180. tetracarbonyl, magnetic susceptibility of, A.,

I, 100.

nicotinylacetonate, A., II, 377.

Iron detection, determination, and separation :detection of, ferric and ferrous, reagents for, C., 162.

in presence of cobalt, nickel, and zinc, C., 162.

determination in, of manganese, C., 13.

of titanium, C., 9. determination of, colorimetrically, with disodium 1:2-dihydroxybenzene-3:5disulphonate, C., 111.

ferric, oxidimetrically, C., 14.

in aluminium alloys, spectrochemically, C., 8.

in borax and boric acid with sulphosalicylic acid, C., 65.

in cement, C., 163.

in cereal products, C., 30.

in chromium-plating baths, colorimetrically, C., 162.

in feeding-stuffs, C., 132. in ferrovanadium, C., 14.

in iron phytate, iodometrically, C., 65.

in organic materials, C., 147.

in sewage, C., 89. in silumin, spectrochemically, C., 61.

Iron, carbide, crystal orientation of, in tempered | Iron detection, determination, and separation :determination of, in unsintered carbides,

photometrically, C., 163. in water, and its separation from aluminium, C., 39.

with amalgams, C., 65.

with dichromate, using silver reductor, C., 65.

with mercurous nitrate, C., 42. with nitroso-R-salt, C., 162.

with o-phenanthroline, C., 161. with thiocyanate, C., 111.

separation of, from manganese, C., 161.

Iron minerals, magnetic properties of, effect of heat treatment on, A., I, 160.

Iron ores, containing manganese, Boston Hill, New Mexico, A., 1, 260.

determination in, of silica, C., 9.

Lake Superior, hydrothermal displacement in, A., I, 260.

Murmansk, minerals of, A., I, 24. S. Otago, A., I, 47.

Iron piston rings, cast, microstructure testing of, C., 112.

Isanic acid, cryoscopy, mol. wt., and structure of, A., 1, 169.

Isatin, nitration of, A., II, 81.

reaction of, with ammonia, A., II, 274. ring opening of, A., 11, 234.

Isatin-3-p-anisylimide, A., 11, 274.

Isatoic anhydride, A., II, 172.

Ischæmia, pathology in relation to, A., III, 457.

Ishkulite, A., I, 71.

Isinglass, as blood substitute in hæmorrhage and shock, A., III, 11.

Isomerides, for trigonal prism with symmetry C_2^{\vee} , A., I, 98.

nitroso-quinonoid, m.p. rule for, A., II, 139.

Isomerisation, contact, A., 1, 179. cis-trans-Isomerisation, of carotenoids and

related compounds, A., II, 9. Isomerism, geometrical, optical, and structural,

Polya's theorem applied to, A., I, 53. See also Tautomerism.

Isomorphism, isotypism and, A., I, 239. of organic compounds, A., II, 100. Isoprene dibromide, A., 11, 245.

copolymers of isobutylene and, structure of, A., II, 177.

reaction of, with hypobromous acid and with

alkyl hypoiodites, A., II, 245.

Isoprene, dihalogeno-derivatives, synthesis of,
A., II, 245.

Isotopes, abundance of, relative, A., I, 262. in snow, A., 1, 262.

radioactive, exchange of, with ions of solid salts, A., I, 41.

separation of, by exchange reactions, A., I, 110.

by thermal diffusion, A., I, 51.

spectroscopically, A., I, 162. separator for, gaseous diffusion, mass spectrometer and, C., 97.

use of, in chemistry, C., 45.

Isotypism, isomorphism and, A., 1, 239.

Itch. See Scabies.

Ivy, poison, prophylaxis against, A., III, 852. toxic principles of, A., II, 208, 346.

Jacobsen rearrangement, A., II, 329. Jaundice, acholuric, hereditary in rats, A., III,

after blood transfusion, A., III, 239. after blood or plasma transfusions, A., III, 166.

associated conditions and, A., III, 413. bilirubin and bile salts in, A., III, 540. epidemic catarrhal, lymphocytic meningitis

in, A., III, 79. hemolytic, congenital, hemoglobin metabolism and hæmatology in, A., III, 7. familial, A., III, 7. lysolecithin fragility in, A., III, 7.

Jaundice, homologous serum, A., III, 658. in Kordofan province, Sudan, A., III, 413. in military personnel of U.S.A., in relation to yellow fever vaccination, A., III, 621. infectious, epidemic of, A., III, 658.

incidence of, in diabetics, A., III, 36. kephalin flocculation test in, A., III, 256. meningococcal, treatment of, with sulphathiazole, A., III, 679.

post-arsphenamine, ætiology of, A., III, 743. postvaccinal, target cells in blood in, A., III,

Takata-Ara reaction in, A., III, 815. Jaw, Foxhall, anatomical feature of, A., III, 520. See also Mandibles.

Jefferson, Thomas, relation of, to chemistry, A.,

Jejuno-ileitis, nutrition in, A., III, 742.

Jejuno-ileum, motility of, effect of drugs on, in men, A., III, 814.

Jejunum, intussusception in, A., III, 192. loops, Thiry-Vella, motility of, action of cathartic salts on, A., III, 57.

Johnin, determination in, of glycerol, A., IlI, 299.

Joints, carpo-metacarpal, rotation at, A., III, 233.

ase of, degenerative, calcium and phosphorus metabolism in, A., III, 276. degenerative and rheumatoid, anthropometry and differences between, A., III, 597.

knee. See knee-joints.

pains in, caused by streptococcus toxin, A., III, 301.

sarcomas of, synovial, A., III, 417. sternochondral, in man, A., III, 445.

Joule effect, in air, A., I, 80.

Juglans nigra, fruit and leaves, vitamin-C in. A., III, 604.

Juglans regia, fruit and leaves, vitamin-C in. A., Ill, 604.

Juniper trees, seedling, germination of, effect of shading and watering on, A., III, 513.

Juniperus scopulorum, seeds, after ripening and germination of, A., III, 154.

Kala-azar, in adult at Malta, 增, III, 693. Indian, treatment of, with propamidine, A., III, 279.

Kangaroos, parturition in, A., III, 571. Kaolin, seams of, A., I, 112.

Kaolinite, electrochemistry of, A., I, 60. heat adsorption of, A., I, 72.

Kaposi's varicelliform eruption. See under Eruptions.

Karakin, A., II, 73.

Kephalin, flocculation of, in relation to serumproteins, A., III, 9.

Keratin, coloured metallic complexes of, A., II, 27.

fibres, photomicrography of, A., III, 788. hair, A., III, 477.

wool, reaction of, with formaldehyde, A., II, 356.

structure and reactivity of, A., III, 818. Keratins, cleavage of, by proteinases after treatment with β -naphthol, A., III, 840.

dispersion of, A., II, 88, 148. X-ray structure of, A., I, 5.

Keratitis, band, A., III, 103. desiccation, A., III, 649.

interstitial, treatment of, with vitamin-E, A., III, 247.

of allergic origin, A., III, 649.

Keratoconjunctivitis, actinic, A., III, 726. epidemic, A., III, 333, 777.

treatment of, with sodium sulphathiazole deoxyephedrine, A., III, 181.

solar, associated with amblyopia, A., III, 529. virus, development of, in chorio-allantoic fluid of 8-day chick embryos, A., III, 849. Kerosene, ingestion of, effect of, on lungs, A., III,

137.

- Kerr effect, effect of thin films on, A., I, 214. magneto-optical, in ferromagnetic mirrors, effect of thin dielectric films on, A., I, 53.
- Keten acetal, reactions of, with quinones, A., II, 346.
- Keten acetals, A., II, 130, 144, 346.
- Keten diethyl acetal, cyclic trimerisation of, by hydrogen fluoride, A., II, 130.
- reaction of, with diazonium salts, A., II, 144. 12-Keto-3(a)-acetoxyætiocholanic acid, methyl ester, A., II, 341.
- 11-Keto-3(a)-acetoxybisnorcholanic acid, methyl ester, A., II, 265.
- 11-Ketó-3(β)-acetoxybisnorcholanic acid, methyl ester, A., II, 265.
- 7-Keto-3-acetoxycholanic acid, 12-hydroxy-, ethyl ester, A., II, 196.
- 11-Keto-3(a)-acetoxycholanic acid, 12-bromo, methyl ester, A., II, 51.
- 11-Keto-3(β)-acetoxycholanic acid, 12-bromomethyl ester, A., II, 51.
- 3'-Keto-4-acetoxy-7-methoxy-1:2-cyclopentenonaphthalene, A., II, 18.
- Δ^{12:13}-2-Keto-x-acetoxyoleanene-28-carboxylic acid, methyl ester, and its oxime and semicarbazone, A., II, 109.
- △12:73-x-Keto-2-acetoxyoleanene-28-carboxylic acid, methyl ester, A., II, 109.
- 3'-Keto-4-acetoxy-1:2-cyclopentenonaphthalene, and its derivatives, A., II, 18.
- naphtnatene, and its derivatives, A., 11, 18. β-Keto-α-acetyl-δ-p-anisyl- Δ^{γ} -pentenoic acid, ethyl ester, A., II, 136.
- β-Keto-α-acetyl-δ-cyclohexyl-Δγ-pentenoic acid, ethyl ester, II, 136.
- cis-7-Keto-1-acetyl-8-methyldecahydrossoquinoline, A., II, 314.
- β-Keto-α-acetyl-δ-1-naphthyl-Δγ-pentenoic acid, ethyl ester, A., II, 136.
- Ketoacetylursolic acid, and its ethyl ester, A., II, 53.
- Keto-acids, A., II, 227.
- enol-lactone fission of, A., II. 211.
- a-Keto-acids, aliphatic, A., II, 151. arylhydrazones of, preparation of, from aromatic diazo-compounds and alkylacetoacetic esters, A., II, 247.
- esters, allyl-type, rearrangement of, A., II, 32. phenylhydrazones, preparation of, A., II, 259.
- a-Keto-acids, polyhydroxy-, preparation of, A., II, 212.
- β-Keto-acids, esters, preparation of, A., II, 211. y-Keto-acids, behaviour of, at dropping mercury electrode, A., II, 298, 307.
- a-Ketoadipic acid, m-carboxyphenyl hydrazone, and its triethyl ester, A., II, 23.
- 3-Keto-∆4-ætiocholenic acid, 12-hydroxy-, methyl ester, A., II, 343.
- γ-Keto-γ-2-amino-4-carbethoxyphenyl-nbutyric acid, ethyl ester, A., II, 23.
- γ-Keto-γ-2-amino-6-carbethoxyphenyl-nbutyric acid, ethyl ester, A., II, 23.
- y-Keto-y-2-amino-4-carboxyphenyl-n-butyric acid, A., II, 23.
- γ-Keto-γ-2-amino-6-carboxyphenyl-n-butyric acid, A., II, 23.
- 3-γ-Keto-α-p-anisyl-n-butylcoumarin, 4-hydroxy-, A., II, 345.
- β-Keto-8-p-anisyl-Δγ-pentenoic acid, ethyl ester, A., II, 136.
- 9-Keto-7:8-azimido-1'-phenylperinaphthindene, A., II, 145.
- 3-Keto-12(β)-benzoyloxybisnorcholanic aci methyl ester, A., II. 265.
- 7-Keto-3-benzoyloxycholanic acid, 12-hydroxy-, and its ethyl ester, A., II, 196.
- 2-Keto-8-benzoyloxy-1:2:3:4-tetrahydroquinoline, A., II, 378.
- 1-Keto-3-benzyl-2-methyl-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, methyl ester, A., II, 299.
- 2'-Keto-4-y-benzyloxy-n-propyl-2':3'-dihydroglyoxalino-4':5'-1:2-thiophen, A., II, 354. 2-Keto-8-benzyltetrahydrofuran, A., II, 53.
- 2-Keto-3-benzyltetrahydrofuran-3-carboxylic acid, ethyl ester, A., II, 53.
- 1-Keto-2-benzyl-1;2;3;4-tetrahydronaphthalene, 2:4-dinitrophenylhydrazone, A., II. 94

- 1-Keto-3-benzyl-1:2:3:4-tetrahydronaphthalene, A., II, 299.
- and its 2:4-dinitrophenylhydrazone, A., II, 94.
- 1-Keto-3-benzyl-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, methyl ester, A., II, 299.
- 1-Keto-3-benzyl-1:2:3:4-tetrahydronaphthalene-2-glyoxylic acid, methyl ester, A., II, 299.
- 3-Ketobisnorcholanic acid, 12-hydroxy-, methyl ester, A., II, 343.
- 3-Ketobisnorcholanic acid, $12(\beta)$ -hydroxy-, and its $12(\beta)$ -acetyl derivative, A., II, 264.
- 12-Ketobisnorcholanic acid, 3(a)-hydroxy-, 3(a)-acetyl derivative, methyl ester, A., II, 264.
- 3-Keto-A⁴-bisnorcholenic acid, 12-hydroxy-, and its methyl ester, A., II, 343.
- 3-Keto-4¹¹-bisnoreholenic acid, methyl ester, A., II, 265.
- y-Ketobutylmalonic acid, ethyl ester, ethylene ketal of, A., II, 34.
- Ketobutyrolactonecarboxylic acids, esters, A., II, 320.
- α-Keto-γ-butyrolactone-β-carboxylic acid, ethyl ester, and its derivatives, A., II, 320.
- 4-Ketocamphor, 3:3-dibromo-, A., II, 268.
 3-Keto-2-δ-carbethoxy-n-butylthiophan-4-carboxylic acid, ethyl ester, A., II, 305.
- 3'-Keto-2'-carbomethoxy-3:4-dihydro-1:2cyclopentenophenanthrene, A., II, 137.
- 1-Keto-2-carbomethoxy-7-methoxy-1:2:3:4tetrahydro-2-naphthylacetic acid, ethyl ester, A., II, 77.
- 3'-Keto-2'-carhomethoxy-1:2:3:4-tetrahydro-1:2-cyclopentanophenanthrene, A., II, 137.
- 4-Keto-2-carboxy-3:3-dimethylcyclobutylacetic acid, A., II, 161.
- β-4-Keto-3-carboxycyclohexylpropionic acid, and its 3-ethyl ester, A., II, 33.
- 3-Keto-2-δ-carboxyl-n-butylthiophan, A., II, 305.
- 4-Keto-2-o-carboxyphenyl-1:4-dihydropyridine, x-bromo-, lactam of, A., II, 82.
- 4-Keto-2-o-carboxyphenyl-1:4-dihydroquinoline, and its methyl ester and lactam, A., II, 81.
- 4-Keto-2-o-carboxyphenyl-1:4-dihydro-quinoline, 3-bromo-, lactam of, A., II, 82. x:3-dibromo- x-nitro- and -3-nitro-, lactams of, and their derivatives, A., II, 82.
- 4-Keto-2-o-carboxyphenyl-1:2:3:4-tetrahydro-quinoline, lactam of, and its derivatives, and polymeride, A., II, 81, 82.
- 4-Keto-2-o-carboxyphenyl-1:2:3:4-tetrahydroquinoline, x-bromo-, lactam of, and its benzal derivative, A., II, 82.
- 3-bromo-, lactam of, A., II, 81. 2-Keto-4-(5'-chloro-2'-hydroxyphenyl)-6-
- 2-Keto-4-(5'-chloro-2'-hydroxyphenyl)-6methyl-1:2:3:4-tetrahydropyrimidine-5carboxylic acid, ethyl ester, A., II, 204.
- 2-Keto-4-(2'-chlorophenyl)-6-methyl-1:2:3:4tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.
- 3-Ketocholanic acid, 12-bromo-11(a)-hydroxy-, methyl ester, A., II, 51.
- 12-Ketocholanic acid, 3-hydroxy-, Barbier-Wieland degradation of, A., II, 50.
- Ketocholanic acids, separation of, formed by cholic acid oxidation, A., III, 370.
- 3-Keto-Δ¹¹-cholenic acid, α-oxides of, A., II, 51. 3-Ketocholestane, 5-hydroxy-, A., II, 229.
- Δ^3 -2-Ketocholesten-3-ol, 3-p-toluenesulphonate, A., II, 230.
- 24-Ketocholesterol, and its derivatives, preparation of, A., II, 301.
- 7-Ketocholesteryl benzoate, A., II, 301. 24-Keto-i-cholesteryl methyl ether, A., II, 301. 7-Ketoclionasteryl acetate, A., II, 341.
- 3-Keto-2-δ-cyano-n-butylthiophan-4-carboxylic acid, ethyl ester, A., II, 305.
- α-Keto-γ-cyanobutyric acid, ethyl ester, phenylhydrazone, A., II, 170.
 β-Keto-α-cyano-γδ-dimethyladipic acid, diethyl
- ester, A., II, 147. α-Keto-β-cyano-n-heptoic acid, ethyl ester, A., II, 213.

- α-Keto-β-cyano-n-hexoic acid, ethyl ester, A., II, 213.
- δ-Keto-α-cyanohexoic acid, ethyl ester, ethylene ketal of, A., II, 34.
- 3-Keto-6-p-γ-eyanopropylphenyl-2:3:4:5tetrahydropyridazine, A., II, 298.
- a-Keto-β-cyano-n-valeric acid, ethyl ester, A., II. 213.
- a-Ketodelphonine, A., II, 355.
- 3-Keto-7:12-diacetoxycholanic acid, methyl ester, A., II, 196.
- 12-Keto-3(α):7(α)-diacetoxycholanic acid, methyl ester, A., II, 264.
- 2-Keto-4-(3:4-diethoxyphenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.
- 2-Keto-4-(4'-diethylaminophenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.
- Ketodiginane, dihydroxy-, and its derivatives, A., II, 231.
- Ketodiginene, dihydroxy-, and its diacotate, A., II, 230.
- 2'-Keto-2':3'-dihydroglyoxalino-4':5'-1:2-thiophen-4-valeric acid, A., II, 354.
- 5-Keto-419-6:7-dihydroindane, and its semicarbazone, A., II, 75.
- Ketodihydrolanosteryl acetate, A., II, 269. 1'-Keto-1':4'-dihydronaphtha-2':3'-1:2chrysene, A., II, 126.
- 1-Keto-6:7-dimethoxy-2-benzyl-1:2:3:4tetrahydronaphthalene, and its 2:4-dinitrophenylhydrazone, A., II, 94.
- 1-Keto-6:7-dimethoxy-3-benzyl-1:2:3:4tetrahydronaphthalene, and its 2:4-dinitrophenylhydrazone, A., II, 94.
- 1-Keto-6:7-dimethoxy-3-ethyl-1:2:3:4tetrahydronaphthalene, 5-hydroxy-, A., II, 227.
- 6-Keto-3':4'-dimethoxy-2-methylbenzo-2:1-4:5-oxazine, A., II, 204.
- 3-Keto-6-3':4'-dimethoxyphenyl-4-benzyl-2:3:4:5-tetrahydropyridazine, A., II, 94.
- 4-Keto-3-p-dimethylaminobenzylidenehomocamphor, A., II, 268.
- 2-Keto-4-(4'-dimethylaminophenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic
- acid, cthyl ester, A., II, 204.
 3-γ-Keto-αα-dimethyl-n-butylcoumarin,
 4-hydroxy-, A., II, 345.
- trans-2-Keto-9:10-dimethyldecahydronaphthalene, and its semicarbazone, A., II,
- 2-Keto-1:10-dimethyl-△1(9);3-hexahydro-naphthalene, A., II, 195.
- δ-Keto-β-dimethylhexanoic acid, 2:4-dmitrophenylhydrazone and semicarbazone, A., II, 136.
- 2-Keto-3:3-dimethyloctahydroindole, A., II, 272. 6-Keto-3:6-dimethyl-1-isopropyltetrahydroacenaphthene, and its semicarbazones, A., II,
- 125. 4-Keto-1:6-dimethyl-3-isopropyl-1:2:3:4tetrahydronaphthalene, A., II, 125.
- 2-Keto-1:5-dimethyl-1:2:3:4-tetrahydronaphthalene, A., II, 125.
- 2-Keto-3:3-dimethyltetrahydrofuran-4carboxylic acid, 4-hydroxy-, A., II, 232.
- 1-Keto-5:7-dimethyl-1:2:3:4-tetrahydronaphthalene, semicarbazone, A., II, 223.
- 1-Keto-5:8-dimethyl-1:2:3:4-tetrahydronaphthalene, semicarbazone, A., II, 223.
- 3'-Keto-2:5-dimethyl-1:2:3:4-tetrahydro-1:2cyclopentenonaphthalene-α and -β, 6-hydroxy-, A., II, 19.
- 6-Keto-4:4"-dimethyl-1:2:3:6-tetrahydropyrrolo-2':3'-4:5-pyridine-1:2-1":2"nyrrole, A., II, 352.
- pyrrole, A., II, 352.

 6-Keto-4':4"-dimethyl-1:2:3:6-tetrahydropyrrolo-2':3'-4:5-pyridino-1:2-1":2"pyrrole-5:3"-diearboxylic aeid, diethyl ester,
- A., II, 352. β -Keto- $\gamma\gamma$ -dimethyl-n-valeric acid, methyl
- ester, A., II, 320. a-Keto-aδ-diphenylbutane, hydrazone, A., II, 297. 2:4-dinitrophenyl-
- 3-γ-Keto-αγ-diphenyl-n-propylcoumarin, 4-hydroxy-, and its methyl ether, A., II, 345-

- β -Keto- β -isodurylpropionic acid, A., II, 98. a-Ketoepihomocamphoric acid, dinitrophenylhydrazone and p-nitrobenzylthiuronium salt, A., II, 268.
- Keto-esters, preparation of, A., II, 181. β-Keto-esters, reaction of, with aromatic diazo-compounds, A., II, 331.
- synthesis of, A., II, 320, 359.
- y-Keto-y-2-ethoxy-6-carboxyphenyl-n-butyric acid, A., II, 23.
- a-Keto-β-ethoxy-α-3:4-methylenedioxyphenyl- β -2-hydroxy-3-methoxy-5- γ -hydroxy-n-propylphenylethane, A., II, 167.
- y-Keto-y-2-(ethyloxalamido)-4-carbethoxyphenyl-n-butyric acid, ethyl ester, A., II, 23. y-Keto-y-2-(ethyloxalamido)-6-carbethoxy-
- phenyl-n-butyric acid, ethyl ester, A., II, 23.
- 1'-Keto-3'-ethyl-1:2-cyclopentenophenanthrene, and its oximes, A., II, 11. β -Keto- δ -2-furyl- Δ^{γ} -pentenoic acid, ethyl ester,
- A., II, 136.
- α-Keto-D-galactoheptonic acid, potassium salt, A., II, 212.
- a-Keto-D-galactonic acid, A., II, 212.
- δ-Keto-L-galactonic acid, calcium salt, A., II, 212.
- a-Keto-D-glucoheptonic acid, sodium salt, A., II, 212.
- a-Keto-D-gluconic acid, calcium salt, A., II, 212.
- δ-Keto-d-gluconic acid, determination of, C.,
- β-Ketoglutaric acid, diethvl ester, ethylene ketal of, A., II, 34.
- 2-Ketogulonie acid, assay of, A., III, 674.
- α-Ketoheptoic acid, and its derivatives, A., II,
- 2-Keto-A1(9):3-hexahydronaphthalene, A., II, 195.
- α-7-Keto-Δ^{6:8}-hexahydro-2-naphthyl propiolactone, a-l-hydroxy-, A., II, 372.
- a-Ketohexoic acid, and its derivatives, A., II, 151.
- α-Ketoisohexoic acid, A., II, 151.
- a-Keto-n- and -isohexoic acids, 2:4-dinitrophenylhydrazones, A., II, 289.
- a-Ketohexonic acids, esters, reaction of, with amino-acids, A., II, 184.
- β -2-Ketocyclohexylacrylic acid, and its methyl ester, and their somicarbaznes, A., II,
- a-3-Ketocyclohexylpropiolactone, a-2-hydroxy-, semicarbazones, A., II, 195.
- 2-Ketocyclohexylsuccinic acid, and its deriv-
- atives, synthesis of, A., II, 53. 4-Ketohomocamphor, dioxime, and 3-phenylhydrazone, A., II, 268.
- Ketohomocamphoric acid phenylhydrazone, A., II. 332.
- x-Keto-13-hydroxy-2-acetoxyoleanane-28carboxylic acid, and its derivatives, A., II,
- 12-Keto-3(a)-hydroxyætiocholanic acid, methyl ester, A., II, 341.
- n-a-Keto-β-hydroxybutyric acid, and its derivatives, A., II, 33.
- 3-Keto-4-hydroxy-2-8-carboxy-n-butylthiophan, and its dioxime, A., II, 305.
- 1-Keto-7-hydroxy-5:6-dimethyl-1:2:3:4tetrahydronaphthalene, and its semicarbazone,
- A., II, 44. 3-y-Keto-a-4'-hydroxy-3'-methoxyphenyl-n-
- butylcoumarin, A., II, 345. △12:13-x-Keto-2-hydroxyoleanene-28-carboxylie acid, and its derivatives, A., II, 109.
- 2'-Keto-4-y-hydroxy-n-propyl-2':3'-dihydro-
- glyoxalino-4':5'-1:2-thiophen, A., II, 354. \(\delta^{12:13}\)-x-Keto-2-hydroxysumaresenecarboxylic acid, methyl ester, A., II, 109.
- 1-Keto-6-indanyloxyacetic acid, and its ethyl ester and oxime, A., II, 132.
- Ketols, formation of, from pyruvate and aldehyde, A., II, 91.
- a-Ketolauric acid, and its derivatives, A., II,
- 1-Keto-2-4'-methoxybenzyl-1:2:3:4tetrahydronaphthalene, and its 2:4-dinitrophenylhydrazone, A., II, 94.

- 1-Keto-7-methoxy-2-benzyl-1:2:3:4tetrahydronaphthalene, and its 2:4-dinitro-phenylhydrazone, A., II, 94.
- 3-Keto-2-5-methoxy-n-butylthiophan-4carboxylic acid, ethyl ester, and its oxime and phenylhydrazone, A., II, 168.
- γ-Keto-γ-4-methoxy-2:3-dimethylphenyl-nbutyric acid, A., II, 44.
- 1-Keto-6-methoxy-2:5-dimethyl-1:2:3:4tetrahydronaphthalene, and its 2:4-dinitrophenylhydrazone, A., II, 18.
- 1-Keto-7-methoxy-5:6-dimethyl-1:2:3:4tetrahydronaphthalene, and its semicarbazone, A., 11, 44.
- 1-Keto-6-methoxy-2:5-dimethyl-1:2:3:4tetrahydronaphthalene-2-carboxylic methyl ester, A., 11, 18.
- 3'-Keto-6-methoxy-2:5-dimethyl-1:2:3:4tetrahydro-1:2-cyclopentenonaphthalene-2'carboxylic acid, methyl ester, A., II, 19.
- 1-Keto-3-methoxy-2:3-diphenyl-1:3-dihydrossoindole, A., II, 307.
- 1-Keto-7-methoxy-2-4'-methoxybenzyl-1:2:3:4tetrahydronaphthalene, A., II, 94.
- 1-Keto-6-methoxy-5-methyl-1:2:3:4tetrahydronaphthalene, 2:4-dinitrophenylhydrazone, A., II, 18.
- 1-Keto-6-methoxy-5-methyl-1:2:3:4tetrahydronaphthalene-2-carboxylic acid. derivatives of, A., II, 18.
- 1-Keto-6-methoxy-5-methyl-1:2:3:4tetrahydro-2-naphthylglyoxylic acid, methyl ester, A., II, 18.
- 1-Keto-3-methoxy-3-phenyl-2-ethyl-1:3dihydroisoindole, A., II, 307.
- 1-Keto-7-methoxy-1:2:3:4-tetrahydronaphthalene, 2-bromo-, A., II, 77.
- 1-Keto-7-methoxy-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, methyl ester, A., II, 77.
- 4-Keto-6-methoxy-1:2:3:4-tetrahydro-2naphthoamide, and its oxime, A., II, 221.
- 1-Keto-7-methoxy-1:2:3:4-tetrahydro-2naphthylacetic acid, A., 11, 77.
- 1-Keto-7-methoxy-1:2:3:4-tetrahydro-2naphthylglyoxylic acid, methyl ester, A., II, 77.
- a-1-Keto-7-methoxy-1:2:3:4-tetrahydro-2naphthylpropionic acid, A., II, 77.
- y-Keto-y-6-methoxy-m-tolyl-a-n-amylbutyric acid, and its ethyl ester, A., II, 259.
- γ-Keto-y-6-methoxy-m-tolyl-a-ethylbutyrie acid, and its semicarbazone, A., II, 259.
- -Keto- γ -6-methoxy-m-tolyl- α -n-propylbutyric acid, and its semicarbazone, A., II, 259.
- θ -Keto- ζ -methyl- ζ -n-amyltridecane, A., II, 180. 3-y-Keto-a-methyl-n-butylcoumarin,
- 4-hydroxy-, and its methyl ether, A., II, 345.
- a-Keto-γ-methylbutyrolactone-β-carboxylic acid, ethyl ester, and its phenylhydrazone, A., II, 320, 321.
- c18-2-Keto-9-methyldecahydronaphthalene, 2:4-dinitrophenylhydrazone, A., II, 17.
- 6-Keto-3-methyl-4:5-2':3'-(6':7'-dimethoxyquinolino)-1:6-dihydropyridazine, A., II, 307.
- a-2-Keto-4-methyl-4-ethyl-5-isopropylcyclohexylidenepropionic acid, and the lactone of the enol, A., II, 197.
- 2-Keto-1-methyl- $\mathcal{A}^{1(9);3}$ -hexahydronaphthalene, A., II, 195.
- 2-Keto-10-methyl- $\Delta^{1(2);3}$ -hexahydronaphthalene, A., II, 195.
- a-7-Keto-8-methyl-45:8-hexahydro-2naphthylpropiolactone, a-l-hydroxy-, A., II, 372.
- a-7-Keto-10-methyl-45:8-hexahydro-2naphthylpropiolactone, A., II, 373.
- Keto- β -methyl-n-hexoic S-benzylacid, thiuronium salt, A., II, 376.
- y-Keto-β-methylhexoic acid, $a\epsilon$ -diiodo-, A., II, 376.
- 2-Keto-4-methyl-5- β -hydroxyethyl-2:3dihydrothiazole, A., II, 86.

A., II, 181.

1-Keto-4-methyl-7-indanyloxyacetic acid, and its derivatives, A., II, 132. t-Keto-o-methyl-n-octadecoic acid, ethyl ester, γ-Keto-δ-methyl-n-octoic acid, methyl ester, A., II, 181. 1'-Keto-3-methyl-1:2-cyclopentenophenanthrene, oximes, A., II, 11.

carboxylic acid, and its methyl ester, A., II,

1-Keto-2-methyl-s-octahydrophenanthrene-2-

- β-Keto-δ-methyl-a-isopropyl-n-hexoic
- methyl ester, A., II, 320. 1-Keto-6-methyl-3-isopropylindane. and ita
- semicarbazone, A., II, 125. and 1-7-Keto-1-methylpyrrolizidines, methiodides and picrates, A., II, 241.
- ι-Keto-ν-methyl-n-tetradecoic acid, ethyl ester,. A., II, 181.
- 4-Keto-2-methyl-1:2:3:4-tetrahydroacridine. dinitrophenylhydrazone, A., II, 57.
- 2-Keto-5-methyltetrahydrofuran-3- β -propionic acid, A., II, 53.
- 1-Keto-5-methyl-1:2:3:4-tetrahydronaphthalene-3-carboxylic acid, and its semicarbazone, A., II, 329.
- 2-Keto-4-R-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acids, ethyl esters, A., II, 204
- 6-Keto-1-methyl-1:2:3:6-tetrahydro-4pyrimidylacetic acid, 2-imino-, A., II, 145.
- 3-Keto-2-methyltetrahydrothiophen, and dinitrophenylhydrazone and semicarbazone, A., II, 305.
- 3-Keto-2-methyltetrahydrothiophen-4carboxylic acid, ethyl ester, A., II, 305.
- 3-Keto-2-methylthiophan-4-carboxylic acid, ethyl ester, A., II. 168.
- a-2-Keto-4-methyl-4-vinyl-5-180propenylcyclohexylidenepropionic acid, and the lactone of its enol, A., II, 197.
- 6-Keto-4-methyl-4-vinyl-3-180propenylcyclohexylpropionic acid, a-2-hydroxy-, lactone, A., II, 197.
- Ketones, A., II, 227, 250.
- acetylenic, spectra of, Raman, A., I, 213. aliphatic, higher, solubilities of, A., I, 12.
 - unsymmetrical, acetylation of, with acetic anhydride in presence of boron trifluoride, A., II, 213.
- aromatic, isomerisation of, with aluminium chloride, A., II, 223.
- carboxylation and carbethoxylation of, with triphenylmethide reagent, A., II, 320. condensation of, with cyanoacetic acid, A., II,
- cyclic, related to acetophenone, A., II, 339.
- determination of, C., 191. enol-lactone fission of, A., II, 211.
- formation of, rancidity due to, A., III, 290.
- heterocyclic, A., II, 201, 273. alkylation of, A., II, 201.
- chlorination of, with oxalyl chloride, A., II, 201.
- parachors of, and structure, A., I, 238. preparation of, by ozone oxidation, A., II, 121.
 - apparatus for, C., 104. from nitro-olefines, A., II, 247.
- reaction of, with iodine, in presence of pyridine, A., II, 347.
- reduction of, polarographically, A., I, 226. spectra of, absorption, and of their deriv-
- atives, A., I, 28. steroid. See Ketosteroids.
- synthesis of, by Friedel-Crafts reaction, with aluminium chloride and gallium chloride, A., II, 293.
- unsaturated, molecular compounds of, with
- s-trinitrobenzene, A., II, 16. aβ-unsaturated, condensation of, with
- 1-hexyne, A., II, 177. with 4-hydroxycoumarin, A., II. 344. dimerisation of, A., II, 198.
- unsymmetrical, phenanthrene hydrocarbons from, A., II, 363.
- Ketones, a-bromo-, action of Grignard reagents on, A., II, 367. a-chloro-, reaction of, with alkali, A., II, 338.
- Ketonic acids, from cholic acid, A., II, 196. Ketonic compounds, stabilisation of, by acetalisation, A., II, 33.

- 7-Keto-12-p-nitrobenzoyloxy-3-acetoxycholanic acid, ethyl ester, A., II, 196.
- 7-Keto-12-3':5'-dinitrobenzoyloxy-3-acetoxycholanic acid, ethyl ester. A., II, 196.
- 4-Keto-3-o-nitrobenzylidenehomocamphor, II, 268.
- 3-Keto-6-p-y-nitropropylphenyl-2:3:4:5tetrahydropyridazine, A., II, 297.
- a-Ketononoic acid, derivatives of, A., II, 151. 3-Ketonorcholanic acid, 12-hydroxy-, methyl ester, A., II, 343.
- 3-Keto-41-norcholenic acid, 12-hydroxy-, methyl ester, A., II, 343.
- η-Keto-Δo-octadecenoic acid, and its semicarbazone, A., II, 120.
- η-Heto-Δn-octadecenoic acid, and its semicarbazone, A., II, 119.
- 3-Keto-1:2:2a:3:4:5:6:6a-octahydrochrysene, 10-hydroxy-, and its benzoate and methyl ether, A., II, 137.
- ${\bf 1\text{-}Keto\text{-}} s\text{-} octahy drophen anthrene-2-earboxy lice of the state of th$ acid, methyl ester, A., II, 265.
- 1-Keto-s-octahydrophenanthrene-2-glyoxalic acid, methyl ester, A., II. 265.
- γ-Keto-Δθκμ-octatrienoic acid, methyl ester, reaction of, with molecular oxygen, A., II, 360.
- 4-Keto-3-oximinohomocamphor, A., II, 268.
- Ketoparaconic acids. See Ketobutyrolactonecarboxylic acids.
- a-Ketopentadecoic acid, and its derivatives, A., II. 151.
- oxime, 1'-Keto-1:2-cyclopentenophenanthrene, A., II, 11.
- y-Keto-y-3-perylenyl-n-butyric acid, and its derivatives, A., II, 104.
- 2'-Keto-4-y-phenoxy-n-propyl-2':3'dihydroglyoxalino-4':5'-1:2-thiophen, A., II, 354.
- α -Keto- α -phenyl- β -p-acetylphenylethane, and bis-2:4-dinitrophenylhydrazone ita dioxime, A., II, 297.
- α -Keto- α -phenyl- ϵ -acetylphenylpentane, and its cinnamylidene derivative, A., II, 297.
- a-Keto-α-phenyl-γ-p-acetylphenylpropane, its bis-2:4-dinitrophenylhydrazone, A., II, 297.
- γ-Keto-y-phenyl-γ-anisylidenebutyric acid, A., II, 94.
- α-Keto-α-phenyl-δ-benzoylphenylbutane, A., II, 297.
- α-Kefo-α-phenyl-ε-benzoylphenylpentane, A., II, 297.
- α-Keto-α-phenyl-γ-benzoylphenylpropane, A., II, 297.
- 3-y-Keto-a-phenyl-n-butylcoumarin, 4-hydroxy-, and its methyl ether, A., II,
- a-Keto -a-phenyl-y-p-cinnamoylphenylpropane, A., II, 297.
- 6-Keto-3-phenyl-4:5-2':3'-6':7'-dimethoxyquinolino-1:6-dihydropyridazine, A., II, 307.
- 3-Keto-5-phenylhexahydro-7:8-benzocinnoline, A., II, 195.
- 3-y-Keto-a-phenyl-y-o-hydroxyphenylcoumarin, 4-hydroxy-, A., II, 345. 6-Keto-3-phenyl-4:5-2:3-quinolino-1:6-
- dihydropyridazine, A., II, 307.
- 1-Keto-3-phenyl-1:2:3:4-tetrahydro-2naphthylacetic acid, and its derivatives, A., II, 195.
- B-Keto-B-4-1-phenyl-1:2:3-triazolylpropionic acid, ethyl ester, and its 2:4-dinitrophenylhydrazone, A., II, 145.
- a-Ketopimelic acid phenylhydrazone, and its ethyl ester, A., II, 332.
- 2-Ketopolyhydroxy-acids, kinetics of transformation of, A., I, 157.
- 20-Keto-23-allopregnane-2:3-diacid, A., II, 105. 1'-Keto-3'-isopropyl-1:2-cyclopenteno-
- phenanthrene, and its oxime, A., II, 11. β -Keto- β -4-quinolylpropionic acid, ethyl ester, derivatives of, A., II, 170. Ketosis, A., III, 491.
- fasting, in relation to fat content of preceding diet, A., III, 197.
 - starvation diets and, A., III, 275. in health and disease, A., III, 275.

- Ketosis, in relation to hepatic reserves of glycogen, A., III, 827.
- in swine, A., III, 606.
- Ketosteroids, bromination of, A., II, 21.
- colour reactions of, with m-dinitrobenzene, C., 78.
- excretion of, in pregnant sheep's urine, A., III, 189.
- $a\beta$ -unsaturated, photochemical transformation of, under ultra-violet light, A., II, 50.
- 17-Ketosteroids, determination of, in urine, C., 127, 177.
 - colorimetrically, C., 78.
 - excretion of, after androgen dosage in dogs, A., III, 112.
- separation of, into a- and β -fractions, C., 177.
- urinary, extraction and hydrolysis of, C., 127. in metabolism. C., 127.
- 20-Ketosteroids, 17-hydroxy-, isomerisation of, A., II, 51, 141.
- 24-Keto-3(a):7(a):12(β)-25-tetra-acetoxy-25homocholane, A., II, 140.
- 4-Keto-7:8:9:10-tetrahydroacephenanthrene, A.,
- II, 42. 4-Keto-1:2:3:4-tetrahydroacridine,
- phenylhydrazone, and its hydrochloride, A., II, 57.
- 2-Ketotetrahydrofuran-3-acetic acid, A., II, 53. 2-Ketotetrahydrofuran-3-carboxylic-3-acetic acid, and its diethyl ester, A., II, 53.
- 2-Ketotetrahydrofuran-3-carboxylic-3-propionic acid, diethyl ester, A., II, 53.
- 2-Ketotetrahydrofuran-3-β-propionic acid, A.. II, 53.
- 5-Keto-44:9-tetrahydroindene, 2:4-dinitrophenylhydrazone, and semicarbazone, A., II, 368.
- 1-Keto-1:2:3:4-tetrahydronaphtbalene, reaction of, with diazomethane, A., II, 164. semicarbazone, A., II, 223.
- 5'- or 8'-Keto-5':6':7':8'-tetrahydro-1:2-(2':3'-naphtha)phenanthrene, A., II, 299.
- 3'-Keto-1:2:3:4-tetrahydro-1:2-cyclopentanophenanthrene, 7-hydroxy-, A., II, 137.
- 2-Keto-1:2:3:4-tetrahydro-5-pyrimidmecarboxylic acids, ethyl esters, A., II, 204. 6-Keto-1:2:3:6-tetrahydro-4-pyrimidylacetic
 - acid, 2-imino-, and its derivatives, A., II, 145. 2-imino-5-amino-, and 2-imino-5-bromo-, and
- its hydrobromide, A., II, 145. 3-Ketotetrahydrothiophen, and its derivatives,
- A., II, 305. and its 2:4-dinitrophenylhydrazone
- semicarbazone, A., II, 305.
- 3-Ketotetrahydrothiophen-2-carboxylic acid. methyl ester, and its derivatives, A., II, 305.
- 3-Ketotetrahydrothiophen-4-carboxylic esters, and their derivatives, A., II, 305.
- 3-Ketotetrahydrothiophen-4-carboxylic-2valeric acid, diethyl ester, and its oxime, A., II. 353.
- 6-Keto-1':4':3":5"-tetramethyl-1:2:3:6tetrahydropyrrolo-2':3'-4:5-pyridino-1:2-1":2"-pyrrole-5':3"-dicarboxylic acid. 3"-ethyl-5'-methyl ester, A., II, 351.
- 6-Keto-1':4':3":5"-tetramethyl-1:2:3:6tetrahydropyrrolo-2':3'-4:5-pyridino-1:2-1":2"-pyrole-5':4"-dicarboxylic 5'-cthyl-4"-methyl ester, A., II, 351. 6-Keto-1':4':3":5"-tetramethyl-1:2:3:6acid.
- tetrahydropyrrolo-2':3'-4:5-pyridino-1:2-1":2"-pyrrole-5":4"-dicarboxylic acid. diethyl ester, A., II, 351.
- 5-Keto-3-thion-6-benzyl-1:2:4-triazine, action
- on, of oxidising agents, A., II, 204. 3-Ketothiophan-2-carboxylic acid. ethyl ester, phenylhydrazone of, A., II, 168.
- 3-Ketothiophan-4-carboxylic acid, ethyl ester, phenylhydrazone of, A., II, 168.
- 3-Ketothiophan-4-carboxylic acid-2-β-propionic acid, diethyl ester, A., II, 169.
- 3-Ketothiophan-2-β-propionic methyl ester, A., II, 169. acid, and its
- 3-Ketothiophan-2-β-propionic acid, 4-hvdroxy-, A., 1I, 169.
- a-Ketotridecoic acid, and its derivatives, A., II,

- 24-Keto-3(a):7(a):12(β)-triformoxy-25-acetoxy-25-homocholane, A., II, 140.
- 1-Keto-5:6:7-trimethoxy-3-ethyl-1:2:3:4tetrahydronaphthalene, A., II, 227.
- 2-Keto-2:3:6-trimethylcoumarone, A., II, 302. 3-Keto-2:6:6-trimethyl-41-tetrahydrobenzoic
- acid, semicarbazone, A., II, 196. β -Keto-aay-trimethyl-n-valeric acid. methyl ester, A., II, 320.
- a-Ketoundecoic acid, and its derivatives, A., II, 151.
- a-Ketovaleric acid, barium salt, and ethyl ester, 2:4-dinitrophenylhydrazone, A., II, 151. 2:4-dinitrophenylhydrazone, A., II, 289. p-tolylhydrazone, A., II, 247.
- β -Keto-n-valeric acid, methyl ester, A., II, 320. a-6-Keto-4-vinyl-3-isopropylidene-41-cyclo-
- hexenylpropionic acid, and its p-nitrophenylhydrazone, A., II, 197.
- δ-Keto-δ-p-xylyl-n-butane-aa-dicarboxylic acid, A., II, 339.
- δ-Keto-δ-p-xylyl-n-valeric acid, A., II, 339. Ketyls, association of, A., I, 214.
- Kidneys, alkaline phosphatase in, histochemical test for, A., III, 713. ascorbic acid excretion in, effect of cestrogen
 - administration on, A., III, 414.
 - blood flow in. See Blood circulation, renal. blood flow, glomerular filtration rate, and tubular excretory mass of, in hypertension,
 - A., III, 37. damage to, after sulphathiazole administration, A., III, 55.
 - alkaline phosphatase level in urine in relation to, A., III, 117.
 - and lymphatic atrophy, A., III, 576. due to sulphonamides, A., III, 830. effect of pregnancy on, A., III, 816.
 - detection in, of alkaline phosphatase, C., 176. effect on, of dietary urea in steers, A., III, 352.
 - of sulphamerazine and sulphapyrazine, compared with sulphapyrimidine and sulphathiazole in rabbits, A., III, 829.
 - elasmobranch, A., III, 160. failure of, etiology of. after crush injuries, A.,
 - III, 37. associated with myeloma, pathogenesis of,
 - A., III, 659. fascia of, and its relation to transversalis
- fascia, A., III, 709. fibroblasts and macrophages in, distribution
- and number of, in rats, A., III, 449. function of, effect on, of adrenal cortex,
- pituitary, and thyroid extracts, A., III. 596.
 - of blood transfusion and hypotension due to hæmorrhage, in dogs, A., III, 116. of thyroid activity, A., III, 27.
 - in myxœdema, A., III, 257. in newborn infants, A., III, 659.
- tests for, A., III, 475.
- glomerular development in, as index of fætal maturity, A., III, 3.
- glomerular pole of, fluorescent granules at, in man, A., III, 92.
- hæmodynamics of, effect of adrenaline on, in frogs, A., III, 414.
- hæmorrhagic, prevention of, choline and, in rats, A., III, 750.
- horseshoe, and associated vascular anomalies in cats, A., III, 90.
- hydronephrotic, static intrapelvic pressure of, A., IIÌ, 817.
- in nutritional hypertension in rats, A., III,
- irritation of, due to foreign protein fever
- therapy, A., III, 258. isolated, diodone excretion by, of dogs, A., III, 658.
- nuclear inclusions in, of Australian opossums under laboratory conditions, A., III, 194. obstruction of, in sulphapyrimidine therapy,
- prevention of, A., III, 208. phosphatase in, A., III, 743.
- physiology of, between two wars, A., III, 540. pressor substances in, production of, A., III,

Kidneys, pressor and depressor substances from, A., III, 164.

reaction of, to dehydration, A., III, 659. tubules, diodrast and glucose transfer by, effect of thyroxine on, A., III, 596. epithelium of, in relation to alkali reserve,

A., III, 596.

function of, role of renal innervation in, A., III, 540.

galactose absorption by, in dog, A., III, 816.

injurious action on, of alloxan, A., III, 543. secreting, action of adrenal cortical compounds and l-ascorbic acid on, in cultures, A., III, 816.

uranium poisoning of, plasma flow and plasma diodone clearance in, A., III, 597. protection against, by V-factor, A., III,

urea in, back-diffusion of, in mammals, A., III, 743.

Kidney disease, adenocarcinoma, papillary, A., III, 481.

blood-pyruvic acid level in, A. III, 672. cancer, frog, growth and regression of, transplanted into tadpole tails, A., III, 478. pelvis, A., III, 822.

hydronephrotic, phosphatase disappearance from, A., III, 116.

ischæmic, metabolism of, A., III, 116. necrosis of, bilateral cortical, after burns, A., III, 257.

serum-lipins in, A., III, 168.

treatment of, with calcium, A., III, 37. tumours of, cortex, A., III, 822.

unilateral, associated with hypertension, A., III, 244.

Kidney extracts, treatment with, of renal hypertension, A., III, 720.
Killifish. See Fundulus heteroclitus.

Kilns, laboratory, atmospheric control in, C., 48. Kimberlites, micaceous, Central Siberia, A., I,

Kinematography, micro-, electron, with electron microscope, C., 205.

Kinetics, chemical, and second Iaw, A., I, 106. Kinetic theory, molecular constants and, A., I, 214.

Klebsiella pneumoniæ, infections with, activity of sulphonamides against, A., III, 206.

Knees, arthritic contractures of, treatment of, A., III, 301.

Knee-joints, hydrarthrosis of, fluid removal in, by acid salts, A., III, 259.

Knopite, age of, from pyroxenite intrusion, Kola Peninsula, A., I, 70. Koechlinite, A., I, 136.

Krypton, isotopes, from uranium disintegration, A., I, 234.

preparation and radiochemical separation of, A., I, 181.

spectrum of, arc and spark, A., I. 262.

L.

Labour, blood-paraldehyde concentration after administration during, A., III, 554. dolantin and scopolamine in, A., III, 496. duration of, effect on, of salt-poor diet, A., III,

470. uterine contractions in relation to, A., III,

469. effect on, of vitamin-K, A., III, 453. induction of, with ergot, A., III, 135. leucocyte count in, A., III, 793.

neuro-muscular dystrophy during, calcium gluconate and vitamin-D in, A., III, 470. pain in, A., III, 31.

painless, nerve block for, A., III, 582. pulse and respiratory variations in women

during, A., III, 718. salt-poor diet in relation to, A., III, 410. spinal anæsthesia during, in cardiac failure cases, A., III, 58.

sudden death in, A., III, 593. sympathetic anæsthesia in, A., III, 103. Labour. See also Childbirth, Dystocia, and Pregnancy.

Laburnum, alkaloids of, A., III, 568.

Lac, resins of, dipole moments of, A., I, 29. Lacerta, shoulder region musculature develop-ment in, A., III, 445.

Lachrimation, reflex of, A., III, 583.

Lacquers, hair, contact dermatitis from, A., III, 557, 836.

Lacquer films, hardness of, determination of, by height of rebound of ball, C., 96.

Lactation, biochemistry and physiology of, A.,

calcium, nitrogen, and phosphorus metabolism during, A., III, 470.

deciduomata production during, in rats, A., III, 112.

dietary factor in, A., III, 48.

dietary requirements for, A., III, 47.

effect on, of adrenal cortical compounds, A., III, 341.

of calcium deficiency, in rats, A., III, 268. of fats, in rats, A., III, 671. of stilbæstrol, A., III, 740.

induction of, by diethylstilbostrol esters in heifers, A., III, 740.

by hexestrol containing tablets in bovines, A., III, 740.

by cestrogen in bovines, A., III, 739. inhibition of, A., III, 813.

inhibition and suppression of, diethylstilbæstrol in, A., III, 740. nutrition in, A., III, 41, 264.

persistency of, in dairy cattle, A., III, 655. regulation of, A., III, 31.

suppression of, by stilbæstrol, A., III, 469. by stilbœstrol dimethyl ether, A., III, 736. Lactic acid, blood. See under Blood.

β-butoxy-, β-ethoxy-, β-methoxyethyl and β-tetrahydrofurfuryl esters, A., II, 319. derivatives, preparation and pyrolysis of, A., II. 319.

pyrolysis of, A., II, 217. destruction of motor and plates by, A., III,

in milk. Seo under Milk. optically-active, configurative relation of, to a-hydroxybutyric acid, A., II, 32.

thallium di-2-pyridyl ester, A., II, 66. Lactobacillus acidophilus, differentiation of, from L. bulgaricus, A., III, 771. nutrition of, A., III, 844.

Lactobacillus arabinosus, amino-acid nutrition of, A., III, 147, 371.

assay of leucine with, A., II, 250. growth of, effect on, of colamine, A., III,

Lactobacillus bulgaricus, nutrition of, A., III, 844.

Lactobacillus casei, effect on, of folic acid and pyridoxine, in presence of alanine, A., III,

utilisation by, of biotin, and its methyl ester, A., III, 435.

Lactobacillus casei ϵ , growth factors for, A., III, 771.

Lactoflavin, elimination of, in normal and adrenalectomised animals, A., III, 186. See also Vitamin- B_2 .

β-Lactoglobulin, amino-acids from, A., II, 88. clectroviscosity of, A., I, 126.

Lactones, digitaloid, with allocholane configur-

ation, A., II, 106. reaction of, with Grignard reagents, A., II, 142.

unsaturated, effect of, on frog's heart, A., III, 759.

β-Lactones, A., I, 204; II, 246. β-Lactonic acids, A., I, 204; II, 246. Lactose, fermentation of, in dough, C., 80.

β-Lactose, octa(? hepta)-p-benzeneazobenzoate, A., II, 6.

Lactucarium germanicum, non-saponifiable matter of, A., II, 270. Lævulic acid, determination of, C., 117.

ethyl ester, ethylene ketal of, A., II, 34. Lagenaria, polyploidy in, fruit development in, A., III, 231.

Lakes, Kustanai region, mineral deposits in, A.,

North East Wisconsin, chlorophyll in, A., III, 380.

Vilas Co., Wisconsin, limnology of, A., I, 160. sediments of, A., I, 112, 134.

Lake water. See under Water.

Lambs, fattening of, feeds for, evaluation of, A., III, 418.

phosphorus requirements for, A., III, 485. Lambliosis, A., III, 70.

Laminaria flexicaulis, osmosis with phosphates in, A., III, 704.

Lamps, electric. See Electric lamps. keten, C., 166.

Lanatoside-C, treatmediscase, A., III, 608. treatment with, of eardiac

γ-Lanostene, A., II, 270. Lanosterol, transformation products of, A., II,

269. Lanthanum, isotopes, radioactive, y-rays from,

energy of, A., I, 1. Lanthanum alloys, with aluminium, crystal

structure of, A., I, 99. with gallium, crystal structure of, A., I, 239.

with magnesium, crystal structure of, A., I, 239.

Lanthanum, alkali molybdates and tungstates, A., I, 231.

basic nitrite, A., I, 291. Laparotomy, hot pads in, adhesions due to, A., III, 259.

Larch trees, artificial defoliation of, A., III, 84. Lard, antioxidant for, development of, C., 81. heated, affect of feeding to rats, A., III, 420.

Larix occidentalis, arabogalactan from, A., II,

Larus argentatus, adult characters and sex behaviour in, hormonal determination of, A., III. 253.

Laryngectomy, application of sulphanilamides in, A., III, 651.

HæmophilusLaryngitis, influenzæ, with bacteræmia, A., III, 74.

obstructive, of Hæmophilus isolation influenzæ in, A., III, 372. Laryngoscope, new, A., III, 464.

Lathyrism, in white rat, A., III, 128.

Latrodectus, venom, poisoning by, treatment of, A., III, 684.

Latrodectus mactans, venom, pharmacological action of, A., III, 684.

Laurence-Moon-Bardet-Biedl syndrome, A.,

III, 24. Lauric acid, cetyl ester, A., II, 228.

glycidyl ester, A., II, 90. sodium salt, X-ray diffraction by, A., I, 55.

structure of, A., I, 30.

spreading and wetting experiment with, A., I, 133.

Lauric acid, β -hydroxy-, A., II, 151. Laurylsulphinic acid, thallium salt, A., II, 66.

Laurylsulphonic acid, migration data of, in aqueous solution, A., I, 129.

Lavender oil, A., II, 267. Laves phases, crystal chemistry of, A., I, 269.

Law, relation of, to medicine, A., III, 215. Laxatives, methylcellulose, A., III, 360.

Lazulite in rocks of Kongur-Alanghez range, A., I, 48.

Lea, M. Carey, A., I, 133.

Lead, bivalent, co-ordination number of, A., I, I, 68.

corrosion of, by water, products of, A., I, 206. equilibrium of, with its molten fluoride, A., I,

fumes of, collection of, filter-paper method for, C., 62.

passivation of, anodic, in sulphuric acid, A., I, 105.

passivity of, A., I, 40. poisoning by. See under Poisoning.

polarography of, effect of electrolyte on, A., I, 251.

solubility of, in fused lead chloride, A., I, 123. spectrum of, L-emission, A., I, 209. ultra-ray impact transmitted from air to, A.,

Lead alloys, analysis of, spectrochemically, determination in, of antimony, arsenic, and tin, C., 10. preparation of microspecimens of, C., 108. with antimony, lead-rich, A., I, 221. with antimony and silver, A. I, 57. with magnesium, precipitation from, A., I, 11. with tin, thickness of coatings of, on copper wire, C., 157. Lead compounds, absorption of, ascorbic acid nutrition in relation to, in industry, A., III, 127. concentration of, in tissues in disease, A., III, content of, in urine, A., III, 817. deposition of, in bone, A., III, 709. effect of, on blood-calcium, A., III, 61. excretion of, in fæces and urine, effect of sodium citrate on, A., III, 136. in bone, A., III, 2. storage of, effect of arsenates on, A., III, 60. chloride, activity coefficients and solubility of, in ethylene glycol-water solutions, A., I, 37. equilibrium of, with sodium chloride and water, A., I, 250. solubility of, in acetone-ethyl alcohol, dioxan-water, an mixtures, A., I, 154. and glycerol-water chromate, adsorption by, in analysis, C., 109. iodide, structure of, A., I, 271. nitrate, compound of, with thiocarbamide, A., I, 68. monoxide, equilibrium of, with alumina, and with alumina and silica, A., I, 128. orthorhombic, structure of, X-ray, A., I, 216. sublimates, crystal structure of, A., I, 54. selenide, spectrum of, emission, band, A., I, 116. sulphate, equilibrium of, with sodium chloride and water, A., I, 250. Triplumbic tetroxide, crystal structure of, A., I, 30. Lead organic compounds, containing water solubilising groups, A., II, 66.

Lead subacetate. See Acetic acid, lead subsalt. di-(m-nitrophenyl) dichloride and diiodide, À., II, 66. diphenyl phenyl o-carboxyphenyl derivatives of, A., II, 66. hydroxide. diphenyl di-9-phenanthryl, A., II, 66. phenyl dicyclohexyl chloride, A., II, 66. tetraethyl, detection of, in petrol, C., 158. determination of, in petrol, C., 69. tetra-n-hexadecyl, A., II, 66. tetra-n-tetradecyl, A., II, 66. tri-n-dodecyl acetate, and nitrate, A., II, 315. chloride, A., II, 66. tri-n-hexadecyl chloride, A., II, 66. tricyclohexyl, autoxidation of, and its reaction with carbon tetrachloride, A., II, 65. tri-n-octadecyl chloride, A., II, 66. triphenyl o-anisyl, A., II, 66. triphenyl 7-(1:2-benzanthryl), A., II, 66. triphenyl p-carboxyphenyl, and its salts and methyl ester, A., II, 66. triphenyl p-a- an phenyls, A., II, 66. and $p \cdot \beta$ -hydroxyethyl triphenyl o-, m-, and p-hydroxymethyl phenyls, A., II, 66. triphenyl o hydroxyphenyl, A., II, 66. triphenyl 9-phenanthryl, A., II, 66. tri-n-tetradecyl chloride, A., II, 66. Lead detection and determination:-detection of, C., 6. in chemicals and water, C., 109. in reagents and in water, C., 158. determination in, of antimony, arsenic, and tin, C., 10. determination of, C., 9. as chromate, C., 109. as molybdate, C., 109. by titration with iodate, C., 158.

Lead detection and determination : determination of, colorimetrically, C., 158. in antimony, babbitt metal, and tin, C., 3. in blood, spectrographically, A., III, 326; C., 76. in potassium cyanide solutions, polarographically, C., 158. in silicon brass, C., 62. in silver solder, C., 62. in water, C., 89. in zinc alloys, polarographically, C., 57. vanadometrically, C., 6. Lead azo-dyes, A., II, 88. Lead ores, Mirgalimsai deposit, S. Kazakhstan, geochemistry and mineralogy of, A., I, 295. Lead powder, sintering of, A., I, 45. Lead-tin couple, electrochemistry carbonate solutions, A., I, 18. Leather, determination in, of chromium, by wet oxidation, C., 110. durability of, measurement of, C., 173. resistance of, to flexural fatigue, C., 123 scuffing in, apparatus for measuring, C., 124. shrinkage temperature of, C., 123. sole, elasticity of, C., 75. oil-treated, service tests of, C., 123. vegetable-tanned, determination in, of water-solubles, C., 26. wearing tests on, C., 124. Leaves, alcohols of, A., II, 30. carbohydrate formation in, effect of light on, A., III, 230. determination in, of carotene, C., 41. enzyme action in parts of, A., III, 312. extracts, spectrograms of, A., III, 312. photosynthesis in, effect of temperature on, A., III, 230. proteins of, A., III, 232. starving, metabolism of, A., III, 623, 781. transpiration of, A., III, 227. Lebistes reticulatus, growth rate, oxygen consumption, and sexual differentiation time in, effect of thyroid hormone on, A., III, 250. Lecithin, commercial, analysis of, C., 92. effect of, on immune and normal hemolytic serum, A., III, 163.
effect of feeding with, on hypercholesterolmia, A., III, 524. reactivity of, with leprosy sera, A., III, 777. soya-bean, effect of, on polycythæmia, A., III, effect of feeding of, on serum-cholesterol in man, A., III, 576. fatty acids in, A., III, 624. treatment with, in opium addicts, A., III, Lecture experiments, in colorimetry, A., I, 207. on removal of electrolytes from solutions, A., I, 207. Leech. See Diplobdella brasiliensis. Legs, veins of. See under Veins. Leguminosæ, alkaloids of, A., II, 354; III, 568. chlorophyll-protein complexes from, A., III. 784. cross-inoculation grouping of, A., III, 783. determination of, in sausages, C., 131. molybdenum in, A., III, 855. nodules, excised, nitrogen fixation by, A., III, 780. Leiomyoma malignum, of stomach. See under Stomach. Leishmania, cultures, viability of, A., III, 294. Leishmaniasis, infantile, treatment of, with stilbamidine, A., III, 556. visceral. See Kala-azar.

Lemna, growth of, effect on, of growth substances, A., III, 855. Lens. See under Eyes. Lenses, contact, moulded, made of plastics, A., magnifying, meridioncal, in correction and measurement of aniseikonia, A., III, 726. Lepidosteus, ganoids of, meningeal myeloid tissue of, A., III, 520. Lepromin test, A., III, 846. Leprosy, A., III, 299. ascorbic acid in, in rats, A., III, 674. complement-fixation in, A., III, 566.

effect of sapotoxin and vitamin Leprosy, deficiency on, in rats, A., III, 617. lepromin test for, A., III, 846. sera from, reactivity of, with lecithin, A., III, 777. Leptazol, diuretic action of, A., III, 834. Lespedeza cuneata, grazing of cattle on, A., III, Lettuce, boron and indolylacetic acid in, A., III, 515. Massachusetts, immature, riboflavin content of, A., III, 603. seedling, growth of, effect of growth substances on, A., III, 382. Leucine, determination of, C., 92. in foods and protein hydrolysates, C, 191. Leucine, y-hydroxy-, and its flavianate, A., II, dl-Leucine, synthetic, purity of, A., II, 250. I-Leucine, dihydroxyacyl derivatives of, from tunny fish liver, A., III, 124. isoLeucine, determination of, C., 92. Leucines, hydroxy-, A., II, 361. Leuciscus rutilus, A., II, 84. Leucitites, Kolyma River basin, A., I, 294. Leuckart reaction, A., II, 200. N-desylarylamines in, A., II, 348. Leucobalanus, tylose in, A., III, 316. Leuco-crystal-violet, determination of, spectrophotometrically, C., 169. Leucocytes. See Blood-corpuscles, white. Leucocytosis, factor promoting, effect of, on cell growth in bone marrow, A., III, 167. Leuco-dyes, photochemical reactions of, in rigid solvents, A., I, 109. Leuconostoc mesenteroides, growth requirements of, A., III, 297. sucrose phosphorolysis by, A., III, 297. Leucopenia, malignant, treatment of, with sulphapyridine, A., III, 204. Leucoisothioindigotin, A., II, 200. l-Leucyl-l-glutamic acid, anhydride, preparation of, A., II, 324. d-Leucylglycine, hydrolysis of, by serum-peptidase, A., III, 366. Leucylpeptidase from beef muscle extracts, A., III, 767. Leukæmia, appearance and induction of, dietary fact with reference to, in mice, A., III, 820. associated with myelofibrosis, A., III, 455. cells, microsomes, mitochondria, and nucleic acid of, A., III, 789. development of, role of genitals, spleen, and thymus in, in mice, A., III, 747. hæmopoiesis in, effect of myxædema on, A., in hybrid mice, genetics in relation to, A., III, 454. incidence of, and treatment with radiation, A., III, 8. in physicians, A., III, 599. induction of, effect of amino-acids on, in mice, A., III, 599. monocytic, in relation to sarcoma of skin, A., III, 481. mycloid, aleukæmic, A., III, 8. congenital, A., III, 393. local myelopoiesis in, A., III, 97. morphological obliteration of, by tuberculosis, A., III, 634 pregnancy in, A., III, 575. radioactive phosphorus distribution in patients with, A., III, 120, 544. spontaneous, inhibition of development of, by underfeeding in mice, A., III, 746. transmission of, chemotherapy of, A., III, from man and mice, to chicks, A., III, 620. transplantable, growth of, A., III, 664. susceptibility to, effect of adrenalectomy on, in rats, A., III, 747. treatment of, with sulphonamides, A., III, Leukæmogenics, synergism of, in mice, A., III, Leukocytosis. See Leucocytosis. Leukopenia. See Leucopenia. Levinson ratio, A., III, 801.

Levisticum officinale, oil and resin of, A., III, 156. Lewisite, determination of, field apparatus for, C., 117. Licania arborea, seed, oil of, C., 74.
Licanic acid. See γ-keto-Δθ octatrienoic acid.
Lice, body. See Pediculus humanus. control of, in civilian population, A., III, 610. infestation with, insecticides for, A., III, 610. Lichens, chemistry, physiology, and economic uses of, A., III, 439.
depsides and depsidenes of, biogenesis of, A., II, 370. Lichenin, macromolecular structure of, A., I, 31. Lie detector, interrogation of criminals with, A., Lieben, Adolf, 1836-1914, A., I, 69. Lievrite, tin in, A., I, 47. Life, origin of, A., III, 476, 744. Ligaments, clavicular, comparison of, in rat, rabbit, cat and dog, A., III, 625. Ligamentum flavum, hypertrophied, diagnosis and treatment of, A., III, 90.
Light, absorption of, by drops of water, A., I, 29. effect of, on laboratory animals, A., III, 284. infra-red. See Rays, infra-red. intensity distribution of, in scattering media, A., I, 98. intensity variations of, by photo-electric measurements, A., I, 209. reflexion of, by foggy media, A., I, 98. scattered, intensity photo-electric of, measurement of, C., 99. scattering of, by crystals, A., I, 168. by water drops, A., I, 98. in binary mixed liquids, A., I, 98. in solutions, A., I, 268. transmission of, through tissues, A., III, 687. ultra-violet, and apparent vitamin-C, A., III, colour vision in, apparatus for, C., 99. effect of, on bacteria and their toxins, A., III, 557. on chicks, A., III, 128. on respiratory tract infections, A., III, 284. emission of, by anodic polarisation, A., I, therapy with, A., III, 63, 137. variation of, in daylight, A., III, 763. velocity of, in water, A., I, 268. Light filters, grey, physiological, A., III, 462. Lignin, A., I, 28; II, 161, 208. and its derivatives, A., II, 115, 162, 176, 262. beech, A., III, 516. chemistry of, A., II, 284. colour reactions of, and their use in analysis, A., II, 284. compounds related to, spectra of, absorption, ultra-violet, A., I, 28. content of, in Montana grasses, seasonal change in, C., 90. derivatives, esters of, A., II, 356. determination of, in feeding-stuffs, C., 133. in plant tissues, C., 93. in wood and wood pulp, C., 24. esters, aliphatic, A., II, 68. ethanol, ultra-violet absorption spectra of, A., II, 115. in citrus woods, A., III, 444. phenol groups in, A., II, 383. pine, action on, of glycol chlorohydrin, A., II, 208. Lignin A, derivatives of, A., II, 356. Ligninsulphonic acids, model substances for. synthesis of, A., II, 372. Lignoceryldihydrosphingosine, A., III, 549. Lilies, Easter, polyploidy in, A., III, 854. Lilium, tetraploidy in, colchicine-induced, A., III, 86. Limbs, buds of, innervation pattern development in, in frogs, A., III, 447. fore-, functional and morphological adapt-ations in, of lemurs, A., III, 89. regeneration territory of, necessary for restitution, A., III, 787. tetrapod, primitive, origin of, A., III, 233. Lime. See Calcium oxide.

Limestone, basicity factor of, C., 107. beach-, Auckland, N. Zealand, A., I, 71. brucitic, Wakefield, Quebec, A., I, 134. Central Pennsylvania, A., I, 160. for making colourless glasses, C., 59. New Zealand, cobalt content of, A., I, 260. Limnology, Connecticut, A., I, 159. temperature measurement in, thermo-electric apparatus for, C., 100. Limonites, chemistry and mineralogy of, A., I, Limulus polyphemus, heart ganglion discharge in, unit analysis of, A., III, 15.
Linguo-maxillary reflex. See under Reflexes. Linkings, chemical, force constants and lengths of, effect of resonance on, A., I, 53. double, frequency of, in conjugated systems, A., I, 193. semi-polar, A., I, 157. simple, energy of, A., I, 214. triple, hydrogenation of, A., II, 29. Linoleic acid, glycerides of, preparation and properties of, A., II, 318. methyl ester, viscosity of, A., I, 220. vitamin-sparing action of, in treatment of skin affections, A., III, 352. Linolenic acid, glycerides of, preparation and properties of, A., II, 318. a-Linolenin, and its hexabromide, A., II, 318. Linolenyl chloride, A., II, 211. Linoleyl chloride, A., II, 211. Linseed, Punjab. See Linum usitatissimum. Linum usitalissimum, growth and oil production of, in drought, A., III, 377. Liotyphlops albirostris, anatomy of, skeletal, A., III, 570. Lips, cancer of, A., III, 668. Lipæmia retinalis, A., III, 248, 336. in non-diabetic patient, A., III, 803. se, pancreatic, hydrolysis triglycerides, A., III, 284. Ricinus, activity of, effect of salts on, A., III, 612. Lipins, brain-. See under Brain. distribution of, in animal tissues, A., III, 347. muscle. See under Muscle. nitrogen- and phosphorus-free, separation of, A., III, 39. of tubercle bacilli. See under Bacilli, tubercle. serum. See under Blood-serum. synthesis of, in inanition, A., III, 426. Lipocaic, after pancreas removal, A., III, 815. antagonism of, to pituitary in fat metabolism, A., III, 108. treatment with, of diarrhosa of hyper-thyroidism, A., III, 35. Lipohypertrophy, insulin, A., III, 27. Lipoidosis, chemistry of, A., III, 401. Lipolysis, fat absorption and, A., III, 474. Lipomas, stomach. See under Stomach. Liposarcoma, characteristics of, grown in vitro, A., III, 120. Lipoxidase, A., III, 365. action of, A., III, 558. dehydrogenase activity of, A., III, 498. effect on, of eleostearic acid oxidation, A., III, 688. Liquids, adsorbed, f.p. of, A., I, 245. chemical morphology of, A., II, 179. coalescence and cohesion in, A., I, 199. crystalline. diamagnetic anisotropy of, A., I, 273. density of, in relation to temperature, A., I, detection in, of gases, (P.), C., 144. diffusion in, interferometry of, C., 201. drops, gas absorption by, A., I, 244. exchange reactions between solids and, A., I, feed devices for, C., 206. f.p. of, determination of, (P.), C., 48. f.p. and purity of, measurement of, cryometers for, C., 47. ideal, definition of, A., I, 219. insulating. See under Insulating. interfacial and surface tension of, measurement of, C., 196. Ievel control for, photo-electric, C., 206.

Liquids, light scattering and relaxation in, A., I, 118. mixed, adsorbed on metal surfaces, occupational numbers of molecules of, A., I, 244. binary, light scattering in, A., I, 98, 275. separation of, with close boiling points, C., viscosity of, law of, A., I, 150. molecular structure of, A., I, 145. morphology of, A., I, 272. nematic, surface tension of, A., I, 214. measurement of, C., 196. non-conducting, surface phenomena in, under electric discharge in gases, A., I, 172. organic, b.p. of, C., 48. dielectric constants of, viscosity dispersion of, A., I, 192. foam formation by, A., I, 246. partition function for, A., I, 4. properties of, at ultra-high frequencies, C., 204. effect of pressure on, A., I, 223. X-ray scattering in, A., I, 215. rigidity modulus of, A., I, 81. separation of, electronic indicator for, C., spectra of, Raman, and viscosity, A., I, 118. effect of temperature on, A. I, 165. statistical mechanics of, A., I, 99. surfaces of, energy- and order-states of atoms in, A., I, 193. thermal diffusion in, A., I, 149, 275. viscosity of, in electric field, A., I, 243. viscous, absorption of ultrasonic waves in, A., I, 55. viscosity of, C., 52. volatile, pyknometer for, C., 94. Liquid state, theory of, A., I, 268. Listerella, effectiveness of penicillin on, A., III, Listeria monocytogenes, isolation of, in glandular fever, A., III, 372. ithium, Compton Lithium, line and distribution for, A., I, 30. molecular wave functions for, A., I, 53. a-ray distribution from, A., I, 139. spectrum of, effect of electric field strength on, A., I, 261. Lithium compounds, with calcium, crystal structure of, A., I, 194. Lithium salts, electrical conductivity of, in aqueous-alcoholic solution, A., I, 18. Lithium bromate, properties of, dihydrate, A., I, 89. and its solubility of, and its hydrates, A., I, 82. carbonate, solubility of, A., I, 102, 277. chloride, concentration distribution of, in mixtures of, with potassium chloride, A., I. 156. molten, structure of, X-ray, A., I, 119. ferrites, structure of, A., I, 120. fluoride, equilibrium of, with magnesium and sodium fluorides, A., I, 38. with potassium and sodium fluorides, A., I, 37. prisms, in infra-red spectroscopy, C., 148. hydrogen carbonate, existence of, A., I. 229. oxide, equilibrium of, with alumina and with beryllium and boron oxides, A., I, 276. silica, A., I, 128. sulphate, solubility of, in water, A., I, 128. titanates, structure of, A., I, 120. Lithium organic compounds :-Lithium p-2':5'-dimethyl-1'-pyrrylphenyl bromide, A., II, 306. phenyl, exchange reactions of, A., II, 74. mode faction of, A., II, 114.
reaction of, with halogenated hydrocarbons, A., II, 207. Lithium determination :determination of, in aluminium alloys, spectrographically, C., 2. volumetrically, C., 153.
Liver, acid-soluble phosphates in, coincident with carbohydrate metabolism alterations, A., III, 115. adenosinetriphosphoric acid in, A., III, 539.

Liver, d-amino-acid and choline oxidase, and uricase in, in rats, A., III, 194.

arginase in, activity of, effect of hypophysectomy and pituitary hormones on, in rats, A., III, 108, 252.

ascorbic acid content of, in mice, A., III, 665.

carcinogenie factor in, of cancer, non-cancer, cirrhotic, and negro patients, A., III, 195. catalase in. See under Catalase.

cells, binucleated, incidence of, effect of œstradiol benzoate and progesterone on, in rabbits, A., III, 412.

nuclei of, isolated, of rats, A., III, 193. tumour production by, in mice with methylcholanthrene tumours, A., III,

cocarboxylase hydrolysis and synthesis by, in vitro, A., III, 347.

cytoplasm, effect of dietary protein on, A., IIÌ, 749.

damage to, associated with sulphanilamide therapy in infants and children, A., III,

by carbon tetrachloride, detection of, A., III, 596.

by mapharsen, in protein-depleted dogs, protection by methionine against, A., III, 761.

diet in relation to, A., III, 35.

due to vitamin-B-free diet in dogs, A., III, 36

experimental, A., III, 815.

hæmorrhage control in, A., III, 540.

protective action of vitamin-C against, A., III, 35.

reaction after sodium benzoate ingestion in, A., III, 475.

serum-phosphatase activity in, effect on, of cyanide, fluoride, and magnesium, A., III,

treatment of, with sulphonamides, A., III,

death due to, A., III, 256.

developing, cytology of, in mice, A., III, 520,

downward traction on, chronic effects from, A., III, 115.

dysfunction of, A., III, 743.

diagnosis and prevention of, A., III, 256. effect on, of dietary urea in steers, A., III, 352.

of trypan-blue, evtology of, in mouse, A., III, 521.

extirpation of, effect of, on blood corpuscles, A., III, 815.

fat accumulation in, effect of amino-acid and

protein on, A., III, 749. fat metabolism in, on choline-free diets, in relation to vitamin-K, A., III, 474.

fatty, due to pyridoxine deficiency in swine,

A., III, 270. fœtal, neoplastic, normal, and regenerating,

enzymic activity of, A., III, 412. vitamin-A content of, effect of diet on, in

bovines, A., III, 421. function of, A., III, 35.

effect of, on vitamin-A metabolism, A., III, 114.

effect of cholecystectomy on, A., III, 413.

in heart disease, A., III, 256. in newborn infants, A., III, 256. tests for, A., III, 35, 256, 742.

hippuric acid, in relation to body size, A., III, 114.

serum colloidal gold reaction as, A., III,

galactose and glucose assimilation in, A., III,

gastrointestinal tract and, A., III, 193.

glucose formation by, influence of metal ions on, A., III, 606. glycogen in, clinical significance of, A., III,

596. effect on, of nutrient protein reduction, A.,

III. 489. glycuronic acid synthesis and, in rat, A., III,

Liver, glycogen in, in man, A., III, 814. production of, role of carboxy-labelled acetic, butyric, and propionic acids in, A., III, 130.

reserves of, ketosis in relation to, A., III, 827.

test for, phloridzin, A., III, 412.

unit chains of, in rabbits supplied with fructose, glucose, and sucrose, A., III, 606; C., 176.

glycogen metabolism in, studied under fasting conditions, A., III, 491.

heat formation in, effect of adrenaline on, in frogs, A., III, 28.

human, non-saponifiable fractions fluorescent concentrates from, A., III, 662. infarction of, hypoprothrombinemia and, A., III, 256.

iron-protein complex from, A., III, 474.

lipins of, effect of sulphur-containing compounds on, in rats, A., III, 742. normal and hyperplastic, nucleus in, in rats,

A., III, 5.

nucleotide and polynucleotide content of, A., III, 743.

æstradiol inactivation by, effect of vitamin deficiency on, A., III, 742.

peptidases and proteases of, A., III, 217. perfusion apparatus for, C., 51.

phosphate changes in, effect of insulin on, A.,

III, 407. protein content of, effect of fasting on, A., III,

at's, enzyme in, producing hy sulphide from cysteine, A., III, 216. hydrogen

regenerating, chromosome complexity in, in rats, A., III, 663.

riboflavin in, effect of dietary protein on, A., III, 658.

riboflavin and thiamin in, inter-relationship

between, A., III, 752. ribonucleic acid from, isolation and properties

of, A., III, 743.

shark's, analysis of, extraction of oil and vitamin-A in, C., 182.

slices, glycogen synthesis from glucose by, relation of post-mortem interval to, A., III. 49I.

metabolism of, after burning, A., III, 826. effect of anoxia on, from fed and fasted rats, A., III, 35.

Q notation for, A., III, 676.

oxygen consumption of, after anoxia in vitro, A., III, 346.

in lymph and serum from legs before and after burns, A., III, 356.

treatment with, in uveal tract disease, A., III, 104.

of achromotrichia in dogs on synthetic diets, A., III, 671.

vitamin-A in, in relation to its content in plasma, A., III, 267.

Liver diseases, A., III, 658.

blood-pyruvic acid level in, A., III, 672.

cancer, after methylcholanthrene injection in mice, A., III, 660. in negroes in Africa and America, A., III,

820. inhibition of, by addition of adsorbent to

diet of rats, A., III, 350. production of, with p-dimethylaminoazo-

benzene, effect of pyridoxine and other B-vitamins on, A., III, 119.

cirrhosis, cardiac and congestive. A., III, 815.

clinical aspects of, A., III, 658.

development of, in dog deprived of pituitary and thyroid glands, A., III, 413.

induced by p-dimethylaminoazobenzene, A., III, 596.

induced by selenium, liver tumours after, in rats, A., III, 39.

morphology and pathogenesis of, A., III, 475. nutritional ceroid in, A., III, 658. œstrogen excretion after œstradiol and cestrone injection in men with, A., III,

portal, A., III, 256.

Liver diseases, cirrhosis, testicular atrophy in, effect of estrogens on, A., III, 410. cysts, congonital, cancer arising in, A., III, 122.

diagnosis of, tests for, A., III, 115.

effect on, of 3:3'-methylenebis-(4-hydroxy-coumarin), A., III, 10.

epidemic, lymphocytic reaction in, A., III, 36. hepatitis, acute, heterogenetic antibodies in, A., III, 779.

epidemic, A., III, 256. infective, A., III, 346, 701.

epidemic, in Gloucestershire, A., III, 701.

nervous complications of, A., III, 582. hepatomas, A., III, 598.

hepatoma E, origin of, in mice, A., III, 662. infective, treatment of, with ascorbic acid, glucose, and insulin, A., III, 36.

kephalin-cholesterol flocculation test in, A., III, 256.

necrosis, acute, A., III, 816.

from trinitrotoluene, A., III, 816.

tumours, after cirrhosis caused by selenium in rats, A., III, 39.

d-amino-acid oxidase, choline-oxidase, and uricase in rats bearing, A., III, 543.

effect on, in culture, of p-dimethylaminoazobenzene split products, A., III, 118.

induced by p-dimethylaminobenzene, effect in culture of NN-dimethyl-pphenylenediamine on, in rats, A., III, 118.

in coconut oil diet, A., III, 662.

primary, in mice, A., III, 478. vitamin-A administration in, plasmavitamin-A variations after, A., III, 257.

water tolerance test in, A., III, 815. yellow atrophy, acute, in children, A., III, 36.

See also Gierke's disease.

Liver extracts, action of, against shock from burns, A., III, 173.

on toxic effect of diethylstilbæstrol and sulphanilamide, A., III, 256.

d-amino-acid oxidase in, from healthy and tumour-bearing rats, A., III, 64.

assay of, for anti-pernicious anæmia activity, bone-marrow procedure for, A., III, 792.

bile-fistula dog unsuitable as animal for, A., III, 413. bioassav

detection in, of histamine, C., 176. injectable, choline-like substance in, A., III,

potency of, in stimulating gastric secretion, A., III, 657. rat, determination in, of d-amino-acid

oxidase, C., 37. treatment with, A., III, 704.

value of, in diet of rats fed succinylsulphathiazole, A., III, 200.

Liver pills, Carter's, effect of ingredients of, on gall bladder and bile flow, A., III, 57. Liver preparations, fatty acid oxidation in,

relation of adenosine polyphosphates to, A., III, 742.

treatment with, of amyloid disease in man, A., III, 36.

Loaiasis, diagnosis of, antigen for, A., III, 703. Lobotomy, prefrontal, in schizophrenia, A., III,

Lobster, American. See Homarus americanus. female, abdominal width and sexual maturity

of, on Canadian Atlantic coast, A., III, 592. Locomotion, organic form and, physicomathematics of, A., III, 446.

Locust trees, black, propagation of, by treating cuttings with growth substances, A., III, 156. Lolium perenne, alkaloids of, fluorescent, A., II,

113; 111, 282. constituents of roots and stubble of, after

partial defoliation, A., III, 514. fluorescent alkaloid in, C., 86.

perennial, polysaccharide from, A., III, 568. Lonchocarpic acid, derivatives of, A., II, 28.

Lotus. See Nelumbo nucifera. Lotus corniculatus, tetrasomic inheritance in, A.,

Louping ill, virus, sheep, relation of, to Russian encephalitis virus in man, A., III, 5 .

Lubricants, petroleum, determination in, of acids, C., 204. synthetic, properties of, A., II, 357. unaffected by hydrocarbons, C., 207. Lubricating greases, examination of, C., 69, 115. penetration and resistance to torque of, C., 165. Lubricating oils, alteration and contamination of, in use, C., 18. asphaltisation tests for, C., 116. corrosivity of, C., 116. detection in, of water, (P.), C., 197. oxidation of, in lubrication, C., 56. service performance of, evaluation of, C., 18. test for, stability, C., 69. testing of, (P.), C., 69. by toluene dilution point, C., 165. used, (P.), C., 18.

Lucerne, and its fractions, in nutrition of breeding ewes, A., III, 351. carotenes in, A., III, 568. carotene and nitrogen partition in, A., III, 310. constituents of, effect of gypsum and sodium selenate applications on, A., III, 153. determination in, of carotene, chromatographically, C., 139. nectar from, A., III, 310. sulphur nutrition of, A., III, 514. "tree." See Cytisus proliferus. Lucerne hay, nutritive value of, A., III, 418. Luciferase, equilibrium of, with luciferin, A., III, 765. Luciferin, equilibrium of, with luciferase, A., III, 765. spectrum of, absorption, and its oxidation product, A., III, 138. Lucigenin, chemiluminescence of, A., I, 181. luminescence of, effect of catalysts inhibitors on, A., I, 141. Ludwig-Soret coefficients, determination of, A., I, 198. Lumbricoids. See Allolobophora chlorotica, and Lumbricus herculeus. Lumbricus herculeus, giant sperms and polyvalent sex cells in, formation of, A., III, 571. Lumichrome, oxidation of riboflavin to, A., III, 561. Luminescence, titration by means of, C., 142. Luminescence analysis. See under Analysis. Lumiœstradiol methyl ether, A., II, 230. Lumiœstrone, and its derivatives, A., II, 230. Lumitestosterone pinacol, A., II, 50. Lunch, industrial. See under Diet. Lungs, adenomatosis of, A., III, 599 bilateral, multiple, in man, A., III, 40. alveolar epithelium of, hyperplasia of, in disease, A., III, 175. alveolar lining of, under pathologic conditions in man and animals, A., III, 175. artery of. See under Arteries. bronchial and vascular trees of, anatomy of, A., III, 89. changes in, due to bilateral vagotomy in rabbits, A., III, 799. clearance of, mechanism of, A., III, 458. collapse of, postoperative, in childhood, A., IIÎ, 100. effect on, of kerosene ingestion, A., III, 137. emphysematous and normal, inadequate ventilation in, analysed by breathing pure oxygen, A., III, 329. endometriosis of, A., III, 668. exudates and transudates from, A., III, 173. hæmorrhage of. See under Hæmorrhage. hæmosiderosis in, in boy, A., III, 723. insufficiency of, A., III, 176. intrabronchial fixation of, A., III, 389. lower accessory, in man, A., III, 786. mineral content of, of coalfield workers in South Wales, A., III, 497. perfused, isolated, histology of, A., III, 175. physiology of, A., III, 799. vascular capacity of, respiratory changes in, A., III, 525. veins of. See under Veins. vital capacity of, effect of anesthetics in abdominal operations on, A., III, 245.

Lungs, volume of, effect of posture on, A., III, 175. Lung diseases, abscess, in relation to subdivision of bronchi, A., III, 446. actinomycosis. See under Actinomycosis. asbestosis, and pulmonary cancer, coincidence of, A., III, 123. bagasse, A., III, 762. cancer, and pulmonary asbestosis, coincidence of, A., IlI, 123. associated with lipoid pneumonia, A., III, in negro boy, A., III, 668. primary, incidence of, and its increase, A., III, 668. congestion, lung volume and its subdivisions in recumbent and upright positions in patients with, A., III, 175. emphysema, A., III, 329. fibroadenoma, A., III, 668. plasmocytoma, A., III, 668. tumours, incidence of, effect of anthracite dust and silica on, in mice, A., III, 663. induction of, with urethane, A., III, 416, 662. See also Pleurisy, Pneumonia, Tuberculosis, Lupins, blue. See Lupinus angustifolius. "tree." See Lupinus arboreus. Lupinane, derivatives of, A., II, 276. Lupinine, isolation of, from anabasine sulphate, A., II, 280. Lupinus albus, growth of, effect on, of sulphanilamide and its derivatives, A., III, 442. respiration in, A., III, 622. Lupinus angustifolius, alkaloids of, A., III, 568. asparagine and glutamine formation in, A., III, 83. Lupinus arboreus, alkaloids of, A., III, 568. Lupulin, relation of, to bitter constituent of hops, A., II, 68. Lupus erythematosus, disseminated, plasmaproteins in, A., III, 325. Lutecium, radioactivity of, A., I, 234 spectrum of, K absorption, A., I, 185. Lutein, conversion of, in boric acid-naphthalene melt, A., II, 76. Luteoma. See Ovary, tumour of, luteinised. Luvanga scandens, fruit, constituents of, A., II, Luvangetin, constitution of, A., II, 167. Lycopene in fruits, A., III, 783. Lycopodium alkaloids, A., II, 147, 281. Lycopodium obscurum, alkaloids of, A., II, 281. Lycopodium tristachyum, A., II, 147. Lycorenine, constitution of, and its derivatives, A., II, 64. Lycorinanhydrohydromethine, derivatives of, A., II. 174. Lycorinanhydromethine methiodide, A., II, 175. Lycorine, constitution of, A., II, 175. Lycoris alkaloids, A., II, 64, 175. Lyctus brunneus, attack by, treatment of wood with boric acid to render immune from, C., 18. Lymph, angiotonase and renin substrate in, in dogs, A., III, 328. atrophy of, in renal injury, A., III, 576. electrophoretic pattern in, in burns, A., III, 9. hypocoagulable and normal, effect hæmorrhage on, A., III, 392. Lymph heart, destruction of, loss of plasma volume after, in toads, A., III, 11. Lymph nodes, cellular changes in, with reference to plasma cell development in mice, A., III, 97. diagnosis and prognosis of, A., III, 323. effect on, of 1:2:5:6-dibenzanthracene, A., III, 792. malignant, effect on, in culture, NNN'N'-tetramethyl-n-phenylenediamine, A., III, 118. metastasis of, as symptom of cancer, A., III, 599. response of, to adrenotropic hormone administration in rat, A., III, 342. Lymph vessels, behaviour of, in bats, A., III, 719. permeability of, lymph pressure and, A., III,

Lymphocytes, regulation of, role of adreno-corticotropic hormone in, A., III, 733. Lymphocytosis, infectious, acute, A., III, 97. Lymphogranuloma-psittacosis, toxins of agents of, action of sulphamerazine on, A., III, 551. Lymphogranuloma venereum, A., III, 777. antigens, phenol enhancement of serological reactivity of, A., III, 151. relation of, to hyperglobulinæmia incidence, A., III, 635. toxic factor in agents of, A., III, 151. virus, resistance of, to sulphonamide therapy in mice, A., III, 375. Lymphomatosis, A., III, 303. Lymphosarcoma, action on, of heptanal sodium bisulphite methyl salicylate and 2:4:6-trimethylpyridine in tissue cultures, A., III, 747. Lysine, metabolism of. See under Metabolism. l(+)-Lysine, preparation of, A., III, 839. l-Lysine decarboxylase. See under Decarboxylase. Lysocithin, hemolytic action of, A., III, 631. Lysolecithin, hemolytic action of, compared with that of saponin, A., III, 390. l-Lyxomethylose, phenylbenzylhydrazone, A., II, 153. d-Lyxose-p-tolylamine, A., II, 72. M. Macaca mulatta, aged, æstrogen administration to, with no resultant tumours, A., III, 542. poliomyelitis in, A., III, 225. sensory ganglia in, after gastrointestinal administration of poliomelitis virus, A., III, Macacus rhesus, karyotype of, A., III, 92. sexual skin of colour measurement in, A., III, 343. Macadamia, constituents of, in development, A., III, 311. oil formation in, A., III, 379. Macracanthorhynchus hirudinaceus, development and glycogen metabolism of, A., III, 4. Macromolecular compounds. See Compounds. Macromolecules. See under Molecules. Magmas, generation of, in earth's crust, A., I, 160. Magnesite, determination in, of magnesium oxide, C., 155. quartz- and tale-, Cobb-Takaka district, A., I, 71. Magnesium, crystals, slip and twinning in, A., diffusion of, in aluminium, A., I, 150. vapour pressure of, over aluminiummagnesium alloys, A., I, 33. Magnesium alloys, A., I, 9. analysis of, spectroscopically, C., 107. determination in, of aluminium, C., 108, 156. of calcium, C., 5. of magnesium, C., 7. of silicon, C., 8. of sodium, C., 57. of zinc, C., 6, 155. microstructure of, A., I, 57. solubilities of, in aluminium, A., I, 150. with aluminium, annealing of, phase formation in, A., I, 220. binary, precipitation treatment of, A., I, 11. precipitation from, A., I, 11. with aluminium, manganese, and zinc, A., I, 9. constitution of, A., I, 33. with aluminium and zinc, analysis of, spectroscopically, C., 108. with cerium and with lanthanum, crystal structure of, A., I, 239. with lead and with tin, precipitation from, A., I, 11. with silver, constitution of, A., I, 33. bases (magnesiumammines), Magnesium

instability constants of, A., I, 127.

with drugs, A., III, 831.

with sulphonamides, A., III, 54.

Magnesium compounds, deficiency of, dermatoses due to, in rats, A., III, 421 effect of, on plant growth, A., III, 228. in blood. See under Blood. metabolism of. See under Metabolism. purification of, A., I, 45. skeletal reserves of, depleted, replenishment of, A., III, 124. with barium and with strontium, crystal structure of, A., I, 194. Magnesium ammonium phosphate, reaction of, with lead and silver nitrates, A., I, 89. beryllate, A., I, 290. carbide, crystal structure of, A., I, 5. chloride, determination in, of impurities, spectrographically, C., 155. heat content of, at high temperatures, A., heats of formation of, A., I, 17. hydrates, specific heat of, A., I, 101. fluoride, equilibrium of, with lithium and sodium fluorides, A., I, 38. germanide, solubility of, in aluminium, A., I, 150, hydroxide, crystalline, A., I, 230 electron microscopy of, A., I, 167. reaction of, with silver nitrate, A., I, 89. perniobate, lattice constants of, A., I, 195. nitrate, and its hydrate, heats of formation of, A., I, 226. heat content of, A., I, 219. nitrates, basic, A., I, 230. nitride, preparation of, A., I, 207. oxide, orystals, electron microscopy of, A., I, 240. determination of, in magnesite and dolomite, C., 155. heat of formation of, A., I, 17. reduction of, with calcium carbide and carbon, A., I, 129. smokes, electron microscopy of films on, A., I, 241. plumbide, solubility of, in aluminium, A., I, 150. selenate, equilibrium of, with selenic acid and water, A., I, 250. silicate, gels, synthesis of, A., I, 48. silicide, solubility of, in aluminium, A., I, 150. stannide, solubility of, in aluminium, A., I, 150. hate, effect of, on blood-magnesium partition, A., III, 524. sulphate, electrical conductivity of, in solution temperature coefficients of, A., I, 155. enema. See under Enema. heptahydrate, preparation astrakhanite, A., I, 43. sulphide, heat of formation of, A., I. 203. zincide, solubility of, in aluminium, A., I, 150. Magnesium organic compounds, A., II, 316. additive compounds of, with furanoid compounds, A., II, 110. Magnesium benzyl chloride, reaction of, with eitronellal, A., II, 218. butenyl bromide, carbonation of, A., II, 246. p-2':5'-dimethyl-l'-pyrrylphenylbromide, A., II, 306. cyclohexyl bromide, reaction of, with chloral, A., II, 121. methyl bromide, reaction of with alicyclic chlorides, effect on, of cobaltous chloride, A., II, 215. methyl iodide, 1:2-addition of, to mesityl ketones, A., II, 298. Magnesium determination :determination in, of calcium, C., 5. of iron, C., 111. of silicon, C., 8. photo-electrically, C., 9. of sodium, C., 57. determination of, C., 5, 59. in aluminium alloys, spectrochemically, C., 8. in grape juice and wines, C., 129. in milk, C., 30.

in silumin, spectrochemically, C., 61.

Maleic acid, chlorination of, induced, A., I, 42. Magnetic alloys. See under Alloys. birefringence, dispersion of, formulæ for, A., dilauryl ester, films, properties of, A., I, 279. lead triphenyl esters, A., II, 66. III, 268. double refraction, dispersion of, A., I, 119. salts, spectra of, absorption, infra-red, A., I, fields, large, measurement of, A., I, 197. 265. hysteresis, damping of oscillations by, A., I, Maleic anhydrides, addition of, to substituted styrenes, A., II, 78. 147. susceptibility, calculation of, A., I, 147. reaction of, with anthranil, A., II, 84. with aromatic oximes, A., II, 222. reduction of, and decrease of refraction, A., 4'-Maleinamidodiphenylsulphone, I, 119. 4-amino-, Magnetisation, in region of initial susceptibility, 4-acetyl and propionyl derivatives, A., II, A., I, 121. law of, in weak fields, A., I, 197. processes of, A., I, 190. N-Malein-N'-methyl-N'-n-dodecylhydrazide, A., II, 184. Malic acid in plant cell metabolism, A., III, 290. Magnetite, in Khalilovo iron ore deposits, A., I, Malignancy. See Cancer. 294.magnetic properties of, A., I, 71. Malnutrition, conditioned, A., III, 264. neuropathology of, associated with prolonged effect of oxidation on, A., I, 70. alcoholism, A., III, 331. Magnetochemistry, A., I, 7. ferromagnetic susceptibility in, elimination, C., 103. Malondiamidine, dihydrochloride, A., II, 59. and its Malondianilide, chloro-, A., II, 158. Magnetostriction, residual, A., I, 196. Malondi-imino ether, dihydrochloride, A., II, 59. Magnusia, biology of, A., III, 841. Malondithioanide, A., II, 325. Malondi-o-toluidide, chloro-, A., II, 158. Mahonia nevalensis, alkaloids of, A., II, 383; III, 856. Malondi-m-xylidide, chloro-, A., II, 158. Malonic acid, adrenaline oxidation inhibition by, Mahonia swaseyi, berbamine and berberine A., III, 250. from, A., III, 88. Maize, fresh and frozen, thiamin content of, amides, chloro-substituted, replacement of before and after cooking, A., III, 126. chlorine atoms in, A., I, 132. glycogen, effect on, of β -amylase, A., III, tert.-butyl hydrogen ester, A., II, 320. 840. condensation of, with aldehydes, A., II, 98. with 5-bromo- and 3:5-dibromosalicyl-aldehydes, A., II, 98. polysaccharides of, A., III, 315. waxy, phosphorylase of, A., III, 289. Maize oil, analysis of, C., 171. with 4-chloro-3:5-dmitrobenzaldehyde, in presence of organic bases, A., II, 335. Maize plants, albino, culture of, A., III, 229. hybrid, factor Z in, A., III, 368. with citral, A., II, 246. growth substances in, and in parent plants, sodium salt, effect of, on barbiturate hypnosis, A., III, 760. A., III, 384. leaves, structure of sheaths enclosing, A., III, Malonic acid, chloro-derivatives, substituted 852. amides of, reaction of, with phenylhydrazine, nutrition of, ion-exchange materials for study A., II, 159. halogeno-derivatives, substituted amides of, activity of, A., II, 158. for, A., III, 378. seedling, growth of, in dark, A., III, 705. Malononitrile, preparation of, A., II, 152. stalks, oxidation of, with nitrobenzene, A., III, 176. Malt, analysis of, C., 32. stigmata, antihamorrhagic factor of, A., III, cellobiase in, A., III, 68. 355. diastatic power of measurement of, C., 178. toxicity to, of iodides in presence of chlorides, Malt extracts, determination in, of vitamin- B_1 , A., III, 309. C., 182. Malachite-green, spectrum of, absorption, A., I, Maltohexaose, hydrolysis of, A., II, 326. Maltose, determination of, in worts, C., 79. Malarœus telchinum, transmission of plague bacilli by, A., III, 507. determination and occurrence of, in tobacco, Malaria, avian, apparatus for study of, C., 43. fermentation of, in dough, C., 80. count of plasmodia in, A., III, 294. B-Maltose, octa(? hepta)-p-benzeneazobenzoate, parasites of, effect of temperature on, A., A., II, 6. isoMaltose, preparation and constitution of, III, 842. from starch, A., II, 93. relapse mechanism in, A., III, 842. Man, antiquity and genetics of, in Americas, treatment of, with quinine, A., III, 493. A., III, 236. carriers of, Anopheles species as, A., III, shape of, as function of time, A., III, 625. 370. cerebral, autopsy study of, A., III, 434. Mandelic acid, aminoalkyl and dialkylaminoalkyl treatment of, with quinine, A., III, 279. esters, salts of, A., II, 46. and its esters, hydrogenation of, A., II, 76. ethyl ester, optically active, A., II, 150. clinical features and treatment of, in British troops in West Africa, A., III, 279. γ-piperidino $\hat{\beta}\beta$ -dimethyl-n-propyl ester, A., II, 46. diagnosis of, A., III, 693. by Wratten light filter, A., III, 293. drugs for, activity of, in man, monkeys, and reduction by, of ferric chloride in thorium birds, A., III, 279. phosphate gel, A., I, 132. Mandibles, infections of, penicillin and surgery from Plasmodium knowlesi, immunity to, in in, A., III, 679. Mangabey. See Cercocebus torquatus atys. rhesus monkeys, A., III, 770. immunisation against, A., III, 560. immunity in, A., III, 614. Manganese, diffusion of, in aluminium, A., I, 150. induced, thiobismol in, A., III, 209. disintegration of, A., I, 263. parasites of, metabolism of, inhibited by ions, thermodynamics of, A., I, 177. isotopes, radioactive, disintegration of, A., I, 76. drugs, A., III, 220. preservation of, at low temperatures, A., y-rays from, energy of, A., I, 76. poisoning by. See under Poisoning. III, 434. quail, protozoan parasite of, fluorescence microscopy of, A., III, 503. X-ray wave-lengths for, A., I, 270. Manganese alloys, with aluminium, iron, and silicon, A., I, 9. serological reactions caused by, A., III, 843. susceptibility to, effect of biotin on, A., III, with aluminium, magnesium, and zinc, A., 46. transmissibility of, by plasma transfusions, I, 9. constitution of, A., I, 33. A., III, 94. with carbon and iron, carbides in, A., I, 276. treatment of, A., III, 758.

with copper, X-ray structure of, A., I, 276.

with magnesium, A., I, 9.

Manganese compounds, distribution of, in animal organism, A., III, 348. nganese perantimonate, pertantalate, A., I, 195. Manganese nitrate, liquid and solid, heat of formation of, A., I, 225. oxide, determination of, in Portland cement, C., 67. sesquioxide, equilibrium of, with ferric oxide, Ã., I, 260. dioxide, catalytic oxidation of acetylene on, A., I, 108. oxides, equilibrium of, with iron oxides, A., I, 282.phosphide, crystal structure of, X-ray, A., I, 216. dithionate dihydrate, specific heat of, A., I, 147. Manganous chloride, heat content of, at high temperatures, A., I, 8. solubility of, in water, A., I, 35. sulphate, monohydrate, specification for, C., 196. use of, as catalyst in determination of serum-calcium, C., 774. Permanganates, determination of, in presence of copper, iodometrically, C., 111. magnetic properties of, A., I, 100. reaction of, with hydrogen sulphide, A., I, 232. Manganese detection, determination, separation :detection of, in steel, C., 13. determination of, and its separation from cerium, chromium, iron, and vanadium, C., 161. by Knorre's method, C., 161. colorimetrically, C., 13. in iron alloys, C., 13. in iron and steel, C., 13. in minerals and solutions, C., 5. in ores, potentiometrically, C., 13. in organic materials, C., 147. photometrically, periodate required for, C., 13. precipitated with iron, effect of ammonium chloride on, C., 161.

Manganese filters. See under Filters. Manganese minerals, magnetic properties of, effect of heat treatment on, A., I, 160. oxide, A., I, 160. Manganese ores, Chiatura, cobalt and nickel in, A., I, 295. containing iron, Boston Hill, New Mexico, A., ferruginous, in phosphorite bed of Kara-tan, A., I, 295. Mazul deposit, genesis of, A., I, 295. Turtle Mts., N. Dakota, A., I, 259. Mangoes, necrotic, histopathology of, A., III, Manihot utilissima, polyploidy in, A., III, 381. Manna, desert, isolation of trehalose from, A., III, 746. Mannans, salep, constitution of, A., II, 8. yeast, A., II, 39. Mannitol, derivatives of, A., II, 119. Mannitol, aζ-diamino-, dihydrochloride, A., II, 184. D-Mannitol, di- and tri-benzoates of, structure of, A., II, 210. Mannosaccharic acid, lactones of, A., II, 212. Mannose, effect of, on blood-sugar and -lactic acid, and liver-glycogen in rabbits, A., III, 357. on plant growth, A., III, 155. metabolism of. See under Metabolism. preparation of, A., II, 251. d-Mannose, pentagallate and penta(triacetylgallate), A., II, 6. 4-d-Mannosidamino-2-methylthiopyrimidine, 6-amino-, and its 6-acetyl derivative, A., II,

59.

Manometers, Warburg, calibration of, C., 141.

Manures, organic, detection and determination in, of auxins, C., 40, 188.

Manostat, pressure-regulating, C., 51.

See also Fertilisers.

Mapharsen, toxicity of, for mice, A., III, 835. treatment with, of syphilis, A., III, 213, 835. nephrosis after, A., III, 213. Maple trees, red and sugar, vegetative propagation of, A., III, 155. Maple wood, ethanolysis of, A., II, 176. Marchantia polymorpha, growth of, effect of nutrient solutions on, A., III, 705. in relation to nutrition and photoperiod, A., III, 82. Mares, parturition in, A., III, 191. Marigolds, early and virescent, A., III, 379. Marihuana, analysis of, with killifish as test animal, C., 137. Marine products, A., II, 340, 341. Marmatite, leaching of, at Broken Hill, A., I, Martensite, crystal structure of, A., I, 30. Mascara, analysis of, C., 37. Masculinity, index of, shoulder-hip ratio as, and relation to physical fitness, A., III, 234. Mass, law of conservation of, demonstration of, C., 104. Mass law, equations from, for calculating phase diagrams, A., I, 62. Mastitis, contagious, diagnosis of, bacteriologically, A., III, 619. cystic, etiology of, nutritional deficiency in, A., III, 467. detection of, in New Zealand dairy cattle, A., III, 148. in milk, C., 180. of streptococcal, A., III, 619. toxemic, Aërobacter aërogenes in milk from cows with, A., III, 297. Mastopathy, treatment of, A., III, 254. Maté, theobromine in, A., III, 784. Materials, content of a given chemical characteristic in, (P.), C., 208. physical properties of, testing machines for, (P.), C., 146. sheet, porosity determination of, (P.), C., 120. tensile strength of, determination apparatus for, (P.), C., 104. Maternity, Arapesh, A., III, 811. See also Childbirth, Dystocia, Labour, Pregnancy, etc. Measles, A., III, 151. attack rate and incubation of, A., III, 511. complicated by encephalitis, A., III, 303. control of streptococcal infection in wards for, A., III, 696. convalescent, human sera from, A., III, 79. encephalitis complicating, A., III, 438. German. See Rubella. prevention of, with convalescent serum, A., III, 511. prevention and treatment of, serum-yglobulin in, A., III, 794. Meat, biotin content of, A., III, 47. cooked, papain digestion of, A., III, 693. determination in, of fat, C., 131. of riboflavin, C., 180. dried, C., 82. lean, vitamin-A activity of, from cattle fed carotene, A., III, 267. minced, toxic substances formed in, by hæmolytic streptococci, A., III, 372. Meat extracts, determination in, of carnosine, C., 82. Meat products, biotin content of, A., III, 47. Meckel's diverticulum. See under Diverticulum. Meconium ileus, achylia pancreatica in relation to, A., III, 657. Media, culture. See Culture media. in contact, wave-train effects for, A., I, 279 Mediastinotomy, anterior, exploratory, myasthenia gravis, A., III, 724. Medical research in wartime, A., III, 38. Medical service with the Eighth Army, A., III, 660. Medicinals, new class of, A., II, 216. Medicine, education in, reform principles in, A., III, 660. psychosomatic, A., III, 23. relation of, to law, A., III, 215. social, meaning and scope of, A., III, 258.

tropical, chemotherapy in, A., III, 680.

" Medomin." See cycloHeptenylethylbarbituric acid. Medulla oblongata, metabolism of, effect of carbon dioxide tension on, A., III, 489. nerve fibres of, silver stain for, A., III, 161. surface area of, in relation to body weight in birds and mammals, A., III, 581. Megacolon, constipation due to treatment of, in adults, A., III, 34. to, surgica Meigs' syndrome, A., III, 592. Meissner-Ochsenfeld effect, A., I, 197. Melanins, A., III, 415. content of, in fishes, A., III, 259. demonstration of, Bodian method applied to, A., III, 522. Melanoma, choroid. See under Choroid. cutaneous, A., III, 122. Harding-Passey, in mice, A., III, 664. transplantable, growth of, microscopy of, with transparent chamber technique in mice, A., III, 121. Melanophores, response of, estimation of, A., III, 259. Melanoplus differentialis, adults and nymphs of, oxygen consumption at different temperatures by, A., III, 274. eggs of, parthenogenetic, tyrosinase in, A., III, ŏ19. Melanospora destruens, glucose utilisation by, effect of vitamin- B_1 on, A., III, 614. Melezitose, octa(? hepta)-p-benzeneazobenzoate, A., II, 6. β-Melibiose, octa(? hepta)-p-benzeneazobenzoate, A., II, 6. Melting point, determination of, apparatus for, C., 48. mixed, under microscope, C., 47. Membranes, collodion, electrical properties and structure of, A., I, 59, 223. geo-electric effect in, A., I, 129. impedance, potential, and rectification in, A., I, 36. living, permeability of, A., III, 687. artificial gills for study of, A., III, 660. permeability of, to water, A., III, 704. pleuro-peritoneal, bursa infracardiaca and, A., III, 385. rubber diffusion of gaseous hydrocarbons through, A., I, 223. synovial, histology of, A., III, 445. Menadione, action of, on glycolysis respiration of tissues, A., III, 717. water-soluble, treatment with, prothrombinopenia, A., III, 717. See also 2-Methyl-1:4-naphthaquinone, and Vitamin-K. Ménière's disease, diagnosis and management of, A., III, 806. histopathology of, A., III, 586. investigation of, A., III, 338. labyrinth surgery for, A., III, 338. mechanism and management of, A., III, 651. migraine and, A., III, 26. treatment of, A., III, 338. Meningioma. See Fibroblastoma, arachnoidal. Meningitis, Bacillus pyocyaneus, after pneumoencephalography, A., III, 103. cerebrospinal, diagnosis and treatment of, A., III, 849. prevention of, with sulphapyridine, A., III, 680. Rocky Mountain, differentiation fièvre boutonneuse, A., III, from 621. transmission of, by Ornithodoros packeri, A., III, 79. virus, infection with, in Caviidæ, A., III, chemotherapy of, in adults, A., III, 206. in children, A., III, 206. egg-culture technique in, A., III, 148. epidemic, carriers in, A., III, 75. Friedlander's bacillus septicæmia and, A., III. hæmolytic, streptococcal, treatment of, with sulphanilamide in infants, A., III, 53. Hæmophilus influenzæ, A., III, 772.

Meningitis, Hamophilus influenza, type B, treatment of, in children, A., III, 436. in premature infant, A., III, 698. influenzal, and its treatment, A., III, 493, 698. Levinson ratio and tryptophan test for, A., III, 801. lymphocytic, in jaundice, A., III, 79. meningococcal, treatment of, A., III, 551. with sulphamerazine, A., III, 132. with sulphapyrimidine and its sodium compound, A., III, 757. with Salmonella bacteræmia, A., III, 299. pneumococcal, treatment of, A., III, 551. with penicillin, A., III, 827. with sulphapyridine, A., III, 828. with sulphonamides, A., III, 206. serous, acute, in scarlet fever, A., III, 647. Serratia marcescens from, A., III, 149. tubercular, origin of, in choroid plexus, A., III, 510. tularemic, A., III, 513. Meningococcæmia, A., III, 74, 299. treatment of, with sulphapyrimidine and its sodium compound, A., III, 757. Meningococci, antigenic and toxic properties of, effect of heat on, A., III, 372. carriers, treatment of, with sulphapyrimidine, A., III, 828. carrier studies with, A., III, 437. dried, effect of light on, A., III, 563. infection by, A., III, 299. purpuric lesions in, A., III, 563. sulphadiazine as prophylactic against, A., III, 299. treatment of, with serum and sulphon-amides, A., III, 757. with sulphapyrimidine, A., III, 493, 828. with sulphonamides, A., III, 828. Waterhouse-Fr derichsen syndrome and, A., III, 589. with articular complications, treatment of, with sulphonamides, A., III, 757. resistance of, to drying, A., III, 563. typing of, from cerebrospinal fluid, A., III, 698 viability of, in cool room, A., III, 222. Meningo-encephalic gliosis of nervous centres and optic nerve, A., III, 151. Menometrorrhagia, accompanying purpura, A., III. 810. causes of, clinicopathologic study of, A., III, 734. Menopause, artificial, hormonal studies in, A., III. 734. diabetes associated with, treatment of, with œstrogen, A., III, 32. effect on, of stilbostrol, A., III, 409. flushes in, dermovascular effects of œstrogens on women with, A., III, 409. gonadotropin excretion in, in women, A., III, 33. hyperthyroidism at, A., III, 807. mammary cancer and, A., III, 197. estrogen use during, psychiatric contra-indications to, A., III, 736. treatment of, with diencestrol, A., III, 254. with hexcestrol, A., III, 254. with cestrogen pellets, A., III, 253. with stilbœstrol, A., III, 468. with stilbæstrol dimethyl ether, A., III, 736. Menorrhagia, mtiology of, nutritional deficiency in, A., III, 467. Menstrual cycle, hormone excretion during, A., III, 734. plasma-vitamin-C levels in women during, A., III, 394. urinary cestrogens in, A., III, 110. Menstrual toxin. See under Poisons. Menstruation, anovulatory, frequency of, A., III, 812. delayed, treatment of, with prostigmine, A., III, 189. disorders in, treatment of, with androgens, A., III, 112.

endometrial biopsy in, A., III, 411.

in women, A., III, 592.

Menstruation. See also Amenorrhea, Menometrorrhagia, Menopause, Menorrhagia, etc. Mental deficiency, Rb gene as cause of, A., III, juvenile, syphilis incidence in, A., III, 22 Mental development, effects of lead poisoning on, A., III, 246. Mentality, prisoner-of-war, A., III, 247. Mentha pulegium, constituents of, A., II, 31. oil of. See Pennyroyal oil. 1-Menthhydrazide, A., II, 241. Mepacrine methanesulphonate. See Atebrin. Mercapturic acids, A., II, 76, 193; III, 202, 276, 827. synthesis of, in animals, A., III, 202. Mercurials, bactericidal evaluation of, A., III, 221. phenolic, A., II, 315. Mercuric chloride. See under Mercury. Mercuri-4-aayy-tetramethyl-n-butylphenol, 2-hydroxy-, and 2:6-di- and 2:3:6-tri-hydroxy-, acetyl derivatives, A., II, 316. Mercury, collisions of, with alkali-metal ions, A., I, 73. idiosyncrasy to, in amalgam fillings in teeth, A., III, 61. isotopes, radioactive, as tracer in mercury vapour measurements, C., 60. oligodynamic action of, A., III, 615. poisoning by. See under Poisoning. precipitation of, from sulphide solutions with zine amalgam, A., I, 290. spectrograms of, A., I, 137. spreading of liquids on, A., I, 124. vapour, dangers of, A., III, 362. viscosity of, in magnetic field, A., I, 274. Mercury alloys, with rare-earth metals, A., I, 44. with silver, native, A., I, 72. thixotropy in, A., I, 276. with zinc, determination in, of mercury, C., 7. Mercury bases (mercuri-ammines), salts of, A., I, 16. Mercury compounds, ammoniated, effect of, on surface bacteria of newborn infant, compared with sulphathiazole and soap and water, A., III, 132. idiosyncrasy to, A., III, 609. content of, in human body, A., III, 61. oligodynamic action of, p mechanism of, A., III, 609. physico-chemical pharmacology of, A., III, 135, 556. Mercury halides, complex, spectra of, Raman, A., I, 85. Mercuric chloride, analysis of, by amalgam method, C., 7. effect of, on urine secretion in dogs, A., III, 135. germicidal, efficiency of, effect of organic compounds on, A., III, 360. supersaturation in solutions of, A., I, 276. nitrate, solutions, removal of mercury from, by mercuric sulphide, A., I. 159. oxide, action of alkalis on, A., I, 22. yellow, specification for, C., 196. sulphide, colloidal, sols, stability of, A., I, 258.precipitation of, with cadmium sulphide, A., I, 67. sulphides, photo-adsorption effects with, A., I, 199. Mercurous salts, reactions of, catalysis of, A., Mercurous bromide, spectrum of, A., I, 27. chloride, spectrum of, A., I. 27. fluoride, spectrum of, emission, ultra-violet, A., I, 96. Mercury organic compounds, A., II, 148. from aliphatic glycols, A., II, 175. Mercury β - β '-chloroethoxyethyl chloride, A., II, 175. diallyl, A., II, 114. di-n-dodecyl, A., II, 66. di-n-hexadecyl, A., II, 66. di-n-octadecyl, A., II, 66. di-n-tetradecyl, A., II, 66. dodecyl acetate, phosphate, and sulphate, A., II, 315. n-dodecyl bromide, A., II, 66. n-dodecyl chloride, A., II, 66.

Mercury organic compounds :-Mercury n-dodecyl iodide, A., II, 66. n-hexadecyl bromide, A., II, 66. n-hexadecyl chloride, A., II, 66. n-hexadecyl iodide, A., II, 66. β - β' - β'' -hydroxyethoxyethyl chloride, A., II, 175. β - β '-hydroxyethoxyethyl chloride, A., II, 175. n-octadecyl bromide, A., II, 66. n-octadecyl chloride, A., II, 66. octadecyl cyanide, A., II, 315. n-tetradecyl bromide, A., II, 66. Mercury determination :determination of, in biological material, C., 7. in organic compounds, C., 19. in rubber, C., 26. in zinc amalgam, C., 7. Merwinite, stability relations of, A., 1, 38. Mesaconic acid, cyanomethyl ester, A., II, 214. Mesenchyme, tumour of, recurrent in adult, A., III, 122. Mesitil, 3:3':5:5'-tetranitro-, A., II, 310. Mesitoic acid, 2:6-dichloro-1-phenyl ester, A., II, 128. 2-Mesitoyl-3:6-dimethylbenzoic acid, and its methyl ester, A., II, 298. Mesitylacetic acid, ethyl ester, A., II, 263. a-Mesitylacetoacetonitrile, A., II, 263. Mesitylacetone, A., II, 263. Mesitylacetylene, bromo-, A., II, 132. B-Mesitylacrylic acid, β-bromo-, and β-chloro-, A., II, 98. $\beta:\beta-di$ bromo-, and its d- and l-isomers, and their quinine salts, A., II, 132. benzoate, A., II, 263. a-Mesitylacrylonitrile, and ite Mesityldiazomethane, A., II, 333. Mesitylethylene, a-chloro-a-bromo-, A., II, 132. Mesitylglyoxal hydrazone, A., II, 333. Mesitylglyoxal, 3-bromo- and 3-bromo-5-nitro-, derivatives of, and 3-nitro-, and its derivatives, A., II, 310. Mesityl ketones, 1:2-addition to, of magnesium methyl iodide, A., II, 298. Mesitylmalonic acid, diethyl ester, A., II, 263. Mesityl-p-methoxybenzylglyoxal, preparation and properties of, A., II, 102. Mesityl p-methoxystyryl ketone, A., II, 102. Mesityl methyl diketone, A., II. 310. Mesitylpropiolic acid, A., II, 98. Mesitylpropiolic acid, bromo-, A., II, 132. methyl ester, A., II, 133. a-Mesitylpropiomesitylene, synthesis of, A., II, 263. a-Mesitylstyrene, and B-nitro-a-3-nitro-, II, 298. Mesityl-2:4:6-trimethylbenzylglyoxal. αγ-Dimesitylpropane-αβ-dione. a-Mesitylvinyl dihydrogen phosphate, A., II, Mesossochlorin e_4 , 6-methyl ester, dimethyl ether, and its copper derivative, A., II, 312 Mesossochlorin e4, bromo-, dimethyl ester, A., II, 312. Mesoisochlorin e, 6-carbinol, dimethyl ester, A., II, 312. Mesoderm, organiser fields of, in amphibia, A., III, 787. Mesons. See Mesotrons. Mesophyllochlorin, bromo-, methyl ester, A., II, 312.2-Mesophyllochlorin, 2-a-hydroxy-, ester, and its 2-a-benzoate, A., II, 312. Mesophyllochlorin-6 methyl ether, methyl ester, and its copper derivative, A., II, 312. Mesoporphyrin IX, hydroxy-, and its dimethyl ester, A., II, 382. Mesopurpurin-3, and its derivatives, A., II, 311. Mesopyrrochlorin-y-a'-cyanoacrylic methyl ester, ethyl ester, A., II, 311. Mesothelioma of pleura. See under Pleura. Mesotrons, algebra of, A., I, 27. charged, scattering of, under radiation damping, A., I, 211. cosmic-ray, formation of, A., I, 95. dipole moment of, A., I, 2. disintegration of, A., I, 27.

Mesotrons, formation of, by proton-proton collisions, A., I, 2. impulse-energy tensor of, A., I, 235. intensity of, varying with altitude and latitude, A., I, I39. life of, A., I, 234. scattering of, under radiation damping, A., I, 27. showers of, in air, A., I, 234. spin of, A., I, 190. from burst measurements, A., I. 26. temperature coefficient of, A., I, 95. theory of, A., I, 2, 95. Mesotron field, theory of, A., I, 95. Mesoxalchloroanilide, phenylhydrazone, A., II, Mesoxaldianilide, phenylhydrazone, A., II, 159. Mesoxalditoluidides, phenylhydrazones, A., II, 159. Mesoxaldi-m-4-xylidide, phenylhydrazone, A., II, 159. Mesoxal-p-toluidide, phenylhydrazone, A., II, 159. Metabolism, acenaphthene, in rats, A., III, 203. acetaldehyde, with acetoin formation, A., III, amide, in etiolated seedlings, A., II, 35. amino-acid, aromatic, relation of vitamin-C to, A., III, 356. vitamin-B₁ and, A., III, 422. d-amino-acids, A., III, 356. ascorbic acid, in horses, A., III, 355. azobenzene, A., III, 755. azo-compounds, A., III, 755. basal, depression of, by brown fatty tissue of hibernating hedgehogs and by prolan, A., III, 489. determination of, in out-patients, A., III, 676. effect on, of adolescence in normal children, A., III, 426. of altitude, A., III, 274. of sulphonamide feeding, A., III, 587. in Bombay, A., III, 274. of albino rat fed goitrogenic diet, A., III, of normal boys and girls, A., III, 129. of rats, A., III, 129. 1:2-benzanthracene, in mice and rats, A., III, bile acids, A., III, 370. butyric and related acids, in animal tissues, A., III, 276. calcium, annual and seasonal changes in, in man, A., III, 52. in bread, A., III, 546. regulation of, endocrine system in relation to, A., III, 106. calcium and phosphorus, A., III, 272. in chick, A., III, 42, 201. in relation to pathogenesis and effects of dihydrotachysterol and iron, A., III, 606. maintenance of, by sunlight in Oklahoma, A., III, 272. carbohydrate, action of vitamin-B. on, A., III, 44. adrenals and pituitary in, of eviscerated rat, A., III, 534. after adrenalectomy, A., III, 251. after burning, A., III, 826. effect on, of dietary potassium and sodium in rate, A., III, 420. in extracts of human brain and muscle, A., in vitamin- B_1 deficiency, A., III, 603. vitamin-C and, A., III, 674. carotenoid, A., III, 421. cellobiose, A., III, 491. changes in, growing chickens, A., III, 754. creatine, in thyroid disease, A., III, 51. 1-cystine and d1-methionine, in dogs on lowprotein diet, A., III, 490. energy, of cattle, A., III, 49. ethyl alcohol, in thiamin deficiency, A., III, 357. rate of, effect of glucose; insulin, and glucose and insulin on, A., III, 427. effect of sodium pyruvate on, A., III, 427.

Metabolism, fat, antagonism of lipocaic to pituitary in, A., III, 108. investigation of, with deuterium indicator, A., III, 426. relation of, to adrenal cortex, A., III, 407. histidine, effect of nutrition and vitamin deficiency on, A., III, 198. in gastrointestinal cancer cases, A., III, 826. intermediary, graphic representation of, A., III, 426. iodine, extrathyroidal, A., III, 728. 17-ketosteroids, C., 127. lipin, in relation to xanthoma diabeticorum, A., III, 275. lysine, A., III, 490. magnesium, in man, A., III, 266. mannose, A., III, 357. dl-1-methylhistidine, in rats, A., III, 754. mineral, of pullets, A., III, 266. mineral and trace element, in animals in relation to deficiency diseases, A., III, 420. nicotinamide-stimulated, effect of sulphonamides on, A., III, 55. nitrogen, interrelationships in, A., III, 604. nutritional disturbance of, prevention of, by cystine, A., III, 41. œstrogens, A., III, 344. rôle of vitamin-B complex in, A., III, 735. cestrogen and progestogen, "rebour phenomenon" in relation to, A., III, 737. estrone, in bovine, human, and rabbit endometrium, A., III, 254. in normal and partially hepatectomised rats, A., III, 593. of hydantoin derivatives related to dilantin, , III, 135. paraldehyde, A., III, 496; C., 140. phenol, by rat tissues in vitro, A., III, 605. phenylalanine, defect in, in premature infants, A., III, 51. phosphate, in extracts of human brain and muscle, A., III, 550. phosphorus, effect on, of growth thyroxine in mice, A., III, 27. of tocopherols, A., III, 272. phosphorylcholine, A., II, 248; III, 754. porphyrins, in relation to susceptibility to carcinogenics, A., III, 748. potassium, A., III, 52. potassium and sodium, of asthmatic and non-allergic children, A., III, 827. progesterone, in hysterectomised women, A., III, 811. -)-proline, studied with deuterium and isotopic nitrogen, A., III, 605. protein, of avian organism, A., III, 356. rate of, effect of, on creatine-creatinine transformation and excretion in rats, A., III, 356. purine, studied with isotopic nitrogen, A., III, pyrimidine, studied with isotopic nitrogen, A., III, 605. pyruvate, by white cells, A., III, 666. pyruvic acid, in brain, A., III, 50. quinine, in pregnant animals, A., III, 136. radio-iodine in thyroid of rats exposed to high and low temperatures, A., III, 533. respiratory. See Respiratory metabolism. serum-albumin, adrenal cortex, food consumption, and hypophysis in relation to, in rats, A., III, 108. steroid, A., II, 196; III, 731. influence of organs on, A., III, 110. steroid hormones, A., III, 735, 736, 741. sulphapyridine, in dog, A., III, 131. a-T.N.T., A., II, 255; III, 606; C., 118. testosterone, in chimpanzee, A., III, 741. thiamin, A., III, 50. rôle of kidneys and liver in, A., III, 751. tissue, from normal and hyperthyroid rats, thiouracil and, A., III, 729. l-tryptophan, intermediary, A., III, 356. tyramine, by rat tissues in vitro, A., III, 605. tyrosine, defect in, in premature infants, A., III, 51.

Metabolism, vitamin-A, effect of hepatic function on, A., III, 114. water, in hypertensive rats, A., III, 328. Metabolites, carcinogonic, analysis of, spectrographic, A., III, 661. Metals, action of, on plants, at a distance, A., III, 707. action of nitric acid on, A., I, 131. action of X-rays on, secondary electrons from, photographic action of, A., I, 262. analysis of, polarographic, C., 203. spectrochemical, with Multisource unit, C., 112. spectrographic, formation of spark spectrafor, Č., 97. spectroscopic, C., 99. in works, C., 61, 65, 66. anisotropy of, A., I, 143. cavitation-resistance of, determined pressure-spray tests, C., 16. cavity testing of, C., 113. coatings of, preparation of, for microscopy, C., 201. sprayed, testing adhesion strength of, C., 113. thickness determination of, C., 207. magnetic devices for, C., 55. colloidal, dichroism of, A., I, 200. components of, testing of, non-destructive, C., 103. copper group, analysis of, polarographic, C., 203. corrosion of, test for, C., 16. creep tests on, C., 113. cubic, specific heat of, A., I, 242. defects in, detected by magnetic-powder method, C., 55. degassing of, analysis of gases removed in, C., diffusion of inert gases through, A., I, 149. dissolving, reduction by, A., II, 367. electrical conductivity of, A., I, 75. electrification and luminescence of gases desorbed from, A., I, 35. electrode potentials of, A., I, 104. electrodeposition of, overvoltago and activity of added organic substances in, A., I, 87. electronic theory of, velocity formula for, A., I, 75. fatigue in, measured by surface stresses, C., 112. ferromagnetic, determination of, by magnetic measurements, C., 66. ferrous, analysis of, spectroscopic, standard electrodes for use in, C., 66. flow curves of, A., I, 243. gases in, analysis of, diffusion pump for, C., 95. gaseous and liquid states of, A., I, 148. grain of, X-ray examination of, C., 55. hardness testing of, loading machines for, C., 112. hardness and structure of, A., I, 196. heavy, protein complexes with, A., II, 208; III, 687. toxicity of, to protoplasm, A., III, 842. hot, emissivity of, A., I, 113. iron group, spectra of, absorption, A., I, 73. light transition, ethylene glycol complexes of, A., II, 358. mechanical testing of, C., 163. molten, equilibrium of, with their molten salts, A., I, 63, 250. non-ferrous, creep of, measurement of, C., 55. inspection of, by means of fluorescence, C., 149. physical properties of, machines for testing, C., 146. physiological action of, at a distance, test for, C., 189. polishing of, electrolytic, C., 208. wax-impregnated broadcloth for, C., 113. polycrystalline, bending of, stress development in, A., I, 55. flow of, A., I, 146. line multiplication in X-ray patterns of, C., 198. I-tyrosine, by rat tissues in vitro, A., III, 605. X-ray examination of, C., 198.

A & C-1°

Metals, secondary electron emission from, A., I, 93, 114.

slip and twinning in, theories of, A., I, 196. soft, etching, grinding, and polishing of, C.,

solution of, in acids, ohmic resistance of cells in, A., I, 284.

sputtering of, cathodic high-frequency and high-ohmic resistances produced by, C., 101. stress measurements in, C., 196.

tarnishing of, effect of supersonic waves on, A., I, 287.

testing of, with supersonics, C., 55.

vapour pressure of, A., I, 33.

working of, plant for, spectrographic analysis in, C., 60.

Metal films, evaporated, secondary electron emission from, effect of adsorbed oxygen on, A., I, 186.

secondary electron emission from, A., I, 185. Metal foil, as screens for X-rays, C., 96.

Metal powders, fritting and sintering of, A., I, 172.

lattice structure of, A., I, 239.

oxidation of, in ultra-microscopy, C., 103.

Metal surfaces, insulated, electron emission from, A., I, 74. occupational numbers of molecules adsorbed

on, from mixed liquids, A., I, 244. records of, from cellulose acetate moulds,

C., 201. structure of, with electron microscope, C.,

102.

treatment of, by diffusion, A., I. 150. water condensed on, at low temperatures, A., I. 32.

Metallic amides, A., I, 45.

carbides, unsintered, determination in, of cobalt, iron, and titanium, photometrically, C., 163.

carbonyls, A., I, 159, 183. history of, A., I, 180.

compounds, chemotherapeutic, A., III, 60. enolates, reaction of, with quinones, A., II,

nitrides, A., I, 45.

oxides, reaction of, with alcohols, A., II, 30. smokes, electron microscopy of films on

crystals of, A., I, 241.

basic, bivalent, che morphology of, A., I, 90. chemistry and

chemistry and morphology of, A., I, 43. sulphides, solubility of, effect of sulphide ion hydrolysis on, A., I, 221.

Metallography, electrolytic polishing of specimens in, C., 113.

sections for, C., 55.

Metamolybdic acid. See under Molybdenum. immunity alterations Metamorphosis, amphibian organisms during, A., III, 711.

Metanilamide, spectrum of, absorption, ultraviolet, A., I, 96.

Metathebainone, degradation products of, A., II, 281, 372.

Meteorites, spectra of, A., I, 50.

Methacrylic acid, methyl ester, co-polymers of, and p-chlorostyrene, A., II, 123. polymerisation of, A., I, 157.

Methæmoglobin, anoxemic effect of, A., III, 722.

determination of, in blood, A., III, 715. spectrophotometrically, C., 125. formation of, A., III, 610.

effect of acctanilide and acetphenetidide on, A., III, 136.

reduction of, by ascorbic acid, A., III, 167. Methæmoglobinæmia, after administration of p-aminoacetophenone, and p-aminopropiophenone, A., III, 609.

due to aniline, circulatory and respiratory response of dogs to, A., III, 523.

due to 2-anilinoethanol, A., III, 792. treatment of, with ascorbic acid, A., III, 523. Methane, adsorption of, on nickel plates, A. I. 151.

equilibrium of, with carbon dioxide, A. I

formation of, catalytic, A., I, 228.

Methane, dichlorodifluoro-, inflammability of, in mixtures with methyl chloride, A., I, 226. dichloronitro-, A., II, 358.

halogeno-derivatives, spectra of, Raman, A., I, 236, 267.

nitro-, condensation of, with vanillin and its derivatives, A., II, 257.

tetranitro-, spectrum of, Raman, A., I, 97. Methanesulphonethylamide, A., II, 92.

Methanesulphonmethylamide, A., II, 92. Methanetri-β-propionic acid. See y-β'-Carboxy-

ethylpentane-ac-dicarboxylic acid.

Methanol. See Methyl alcohol.

Methincyanines, fluorescence of, A., I, 3. Methionine, arsenocholine, betaine, choline and, interrelation of, in chicks, A., III, 484.

detection of, C., 167. determination of, iodometrically, C., 21. protection by, against mapharsen liver injury

in protein depleted dogs, A., III, 761. synthesis of, A., II, 250.

containing isotopic carbon and sulphur, A., II, 324.

dl-Methionine, disulphone of, A., II, 122. metabolism of. See under Metabolism. treatment with, of carbon tetrachloride poisoning, A., III, 743.

l(-)-Methionine, specificity of, in creatine synthesis, A., III, 129.

Methoxyacetophenones, oxidation potentials of,

A., I, 40. colone from, A., II, 262. p-Methoxyacetophenone,

4-Methoxyacetophenone,

carbazone, A., II, 43. 3-nitro-, 2:4-dinitrophenylhydrazone, A., II, 296.

4-Methoxyacetophenonehydrazone, 3-nitro-, A., II, 297.

3-Methoxy-2-acetoxybenzoic acid, 6-bromo-, methyl ester, A., II, 260.

2-Methoxy-5-acetylbenzonitrile, and its 2:4-dinitrophenylhydrazone, A., II, 296.

7-Methoxy-2-acetylcoumarone, A., II, 272. 2-Methoxy-6-acetyl-2-methyltetrahydropyran, semicarbazone, A., II, 198.

2-Methoxyacridines, 6-chloro-9-amino-, N-substituted derivatives of, A., II, 82.

7-Methoxyacridine, 2-chloro-5-amino-, A., II, 82.

 6-Methoxyacridone, 2-chloro-, detection microscopically, C., 119.
 9-y-2'-Methoxy-9'-acridylamino-ββ-dimethylpropylamino-2-methoxyacridine,

6:9-y-6'-dichloro-, A., II, 83. 9-y-2'-Methoxy-9'-acridylaminopropylamino-2methoxyacridine, 6-chloro-, and 6:9-y-6'-di-

chloro-, A., II, 83. -(4-Methoxy-2-allylphenyl):sopropylamine,

β-3-hydroxy-, action of, A., III, 360. p-Methoxy- β -p-anisyl-n-butyrophenone, and its semicarbazone, A., II, 12.

m-Methoxy-a-p-anisylcinnamic acid, and its anhydride, A., II, 130.

6-Methoxy-2-p-anisyl-3-ethylindene, A., II, 130.

p-Methoxy-β-p-anisyl-n-heptophenone, and its semicarbazone, A., II, 12.

p-Methoxy- β -p-anisyl-n- and -iso-hexophenones, and their semicarbazones, A., II, 12 Methoxy-2-p-anisyl-1-indanone, A., II, 130.

2-Methoxy-4-p-anisyl-2-methyl-3:4-dihydrocoumarino-3':4'-5:6-1:2-pyran, A., II, 345.

p-Methoxy- β -p-anisyl-n-octophenone, and its semicarbazone, A., II, 12.

p-Methoxy-β-p-anisyl-n-valerophenone, and its semicarbazone, A., II, 12. 2-Methoxybenzaldehyde, azlactone of, A., II,

272. 3-Methoxybenzaldehyde, 2:4-dthydroxy-, and its

p-nitrophenylhydrazone, A., II, 48. 4'-Methoxy-1:2-benzanthracene, spectrum of, absorption, A., I, 164.

7- and 10-Methoxybenzene(f)quinolines, A., II, 347.

1-Methoxy-3:4-benzfluorenone, A., II, 373.

4-Methoxybenzil, 3-nitro-, A., II, 297.

3-Methoxybenzoic acid, 5-bromo-2-hydroxy-, and its derivatives, A., II, 260.

3-Methoxybenzoic acid, 6-bromo-2-hydroxy-, A., II, 260.

5-Methoxybenzoic acid, 3-hydroxy-, and its 3-acetate, A., II, 192.

5-Methoxybenzoyl chloride, 3-hydroxy-, acetyl derivative, A., II, 192.

 β -3-Methoxybenzoylpropionic acid, β -4-hydroxy-, A., II, 372.

3'-Methoxy-5:6-benzquinoline, 4-hydroxy-. See 7-Methoxybenz(f)quinoline, 1-hydroxy-. 6'-Methoxy-5:8-benzquinoline, 4-hydroxy-, A.,

II. 347. 7-Methoxybenz(f)quinoline, 1-hydroxy-, A., II,

347. 3'-Methoxy-5:6-benzquinoline-2-carboxylic acid, 4-hydroxy-, and its ethyl ester, A., II, 347.

6'-Methoxy-5:6-benzquinoline-2-carboxylie acid, 4-hydroxy-. See 10-Methoxybenz(f)quinoline-3-carboxylic acid, 1-hydroxy-.

10-Methoxybenz(f)quinoline-3-carboxylic 1-hydroxy-, and its derivatives, A., II, 347.

4-Methoxybenzyl alcohol, 3:5-dihydroxy-, A., II,

a-p-Methoxybenzylacetoacetic acid, ethyl ester, A., II, 259.

2-Methoxy-β-benzylcinnamic acid, 5-chloro-, ethyl ester, A., II, 344.

2-Methoxy- α - β -benzyl- α :5-dimethylcinnamic acid, ethyl ester, A., II, 344.

 β -p-Methoxybenzyl-a-ethyl-n-valeric acid. a-cvano-, ethyl ester, A., II, 13.

 δ -p-Methoxybenzyl-n-hexane, γ -cyano-, A., II, 13.

3:3'-3''-Methoxybenzylidenebis-4-hydroxy coumarin, 4"-hydroxy-, A., II, 166.

N-p-Methoxybenzyl-N-methylcarbamide, A., II,

N-4-Methoxybenzyl-N-methylcarbamide, 3-bromq-, and 3-chloro-, A., II, 255.

2-Methoxy- β -benzyl- α -methylcinnamic a.cid. 5-chloro-, ethyl ester, A., II, 344.

7-Methoxy-2-benzylnaphthalene, and its picrate, A., II, 94.

β-p-Methoxybenzyl-Δa-pentenoic acid, a-cyano-, ethyl ester, A., II, 13.

2:4'-Methoxybenzyl-1:2:3:4-tetrahydronaphthalene, A., II, 94.

 β -p-Methoxybenzyl-n-valeric acid. a-cyano-, ethyl ester, A., II, 13.

 β -Methoxy- β -bromomesitylacrylic acid, and its methyl ester, and l-brucine and quinine salts, A., IÏ, 133.

y-Methoxy-Δa,-butadiene, aβ-dichloro-, A., II, 149.

erythroand threo-y-Methoxy-n-butanes, β -bromo-, A., II, 90.

erythro- and threo-y-Methoxy-n-butan-β-ols, and their derivatives, A., II, 90. y-Methoxy-Δa-butylene, aβ-dichloro-δ-iodo-, A.,

II. 149. δ-Methoxybutylmalonie acid, diethyl ester, A.,

II, 168.

δ-Methoxybutylmalonic acid, a-bromo-, A., II, 168.

2-8-Methoxy-n-butylthiophan, 3(4)-amino-, and 4(3)-amino-3(4)-hydroxy-, A., II, 168.

2-δ-Methoxy-n-butylthiophan-4-carboxylic acid, 3-amino-, ethyl ester, A., II, 168.

2-δ-Methoxy-n-butylthiophan-3:4-dione, dioxime and phenylosazone, A., II, 168. 2-δ-Methoxy-n-butylthiophan-3-one, A., II,

168. γ -Methoxy-n-butyronitrile, β -hydroxy-, and its

β-acetate, A., II, 169. 6-Methoxy-2-carbomethoxy-2:5-dimethyl-1:2:3:4-tetrabydro-1-naphthylacetic acid,

1-hydroxy-, derivatives of, A., II, 18. 4-Methoxy-3-carboxy-β-methylcinnamic 2-hydroxy-, A., II, 200. acid.

4-Methoxychalkone-4'-β-d-glucoside, 3:2':4'-tr:hydroxy-. See 4-Methylbutein-4'-

glucoside. 6-Methoxy-2-m- and -p-chlorophenylquinolines, and their derivatives, A., II, 308.

6-Methoxy-2-m- and -p-chlorophenylquinolines, 4-chloro-, A., II, 308.

- 3-Methoxycinnamic acid, 5-bromo-a-amino-4-hydroxy-, a-acetyl derivative, and a-benzoyl derivative, and its esters, 4-chloro-a-amino-4-hydroxy-, a-benzoyl derivative, 5-chloro-a-amino-4-hydroxy-, a-acetyl derivative, and 5-iodo-a-amino-4-hydroxy-, acetyl and benzoyl derivatives, A., II, 60.
- δ-Methoxycoumarin-6-aldehyde, 7-hydroxy-, A., II, 167.
- y-Methoxycrotononitrile, A., II, 169.
- 4-Methoxy-3:4-dehydrohomocamphor, oximes of, A., II, 268.
- 7-Methoxy-2:2-di-p-anisyl-4-methyl-1:2-benzpyran, A., II, 23.
- p-Methoxy- $\beta\beta$ -di-p-anisylpropiophenone, and its semicarbazone, A., II, 12.
- 7-Methoxy-2:2-dibenzyl-4-methyl-1:2-benzpyran, A., II, 23.
- 2-Methoxy-4:6-diethoxy-3-ethylbenzaldehyde, p-nitrophenylhydrazone, and semicarbazone, A., II, 199.
- 2-Methoxy-4:6-diethoxy-3-ethylbenzoic acid, A., II, 199.
- 5-Methoxy-1-(ϵ -diethylamino- β -amylbenziminazole, and its picrate, A., II, 277.
- 5-Methoxy-1-(ε-diethŷlamino-β-amyl-2-methylbenziminazole, and its dipicrate, A., II, 277.
- 3-Methoxy-10-γ-diethylamino-n-propylphenothiazine, A., II, 353. p-Methoxy-αβ-diethyldibenzyl, A., II, 44.
- p-Methoxy- $a\beta$ -diethyldibenzyl, A., II, 44. 4'-Methoxy- $a\beta$ -diethylstilbene, 4-hydroxy-, A.,
- II, 44.
- 6-Methoxy-3:4-dihydronaphthalene, dimerisation of, A., II, 295.
- 7-Methoxy-1:2-dihydronaphthalene, A., II, 226, 295.
- 7-Methoxy-3:4-dihydro-2-naphthoic acid, A., II, 281.
- a-7-Methoxy-3:4-dihydro-1-naphthylpropionic acid, and its ethyl ester, A., II, 77.
- 4-Methoxy-7:8-dihydro-1:2-cyclopentenonaphthalene-3'-acetic acid, A., II, 18.
- 2-Methoxy-a:5-dimethyl-β-benzylcinnamic acid, 3-chloro-, ethyl ester, A., II, 344.
- trans-2-Methoxy-a:5-dimethyleinnamic acid, and its ethyl ester, A., II, 161.
- 4-Methoxy-3:6-dimethylcoumaran-1-one, 5-bromo-, A., II, 54.
- 4-Methoxy-3:6-dimethylcoumaran-1-one-2-carboxylic acid, 5-bromo-, ethyl ester, A., II, 54.
- 2-Methoxy-2:4-dimethyl-3:4-dihydrocoumarino-3':4'-5:6-1:2-pyran, A., II, 345.
- 6-Methoxy-2:5-dimethyl-3:4-dihydro-1naphthylacetic acid, A., II, 19.
- 6-Methoxy-5:5-dimethyl-2:4-diisopropyl-1:3-dioxan, A., II, 233.
- 3-Methoxy-6:7-dimethyl-5:8:9:10:13:14hexahydrophenanthrene-14-carboxylic acid, A., II, 281.
- 2-Methoxy-1:5-dimethylnaphthalene, A., II, 18. and its picrate, A., II, 125.
- 7-Methoxy-2:4-dimethyl-1:8-naphthyridine, A., II, 236.
- γ-4-Methoxy-2:3-dimethylphenyl-n-butyric acid, A., II, 44.
- 6-Methoxy-2:5-dimethyltetrahydro-1-naphthylacetic acid, A., II, 19.
- 7-Methoxy-2:2-di-α-naphthyl-4-methyl-1:2benzpyran, A., II, 23.
- Methoxydiphenyl ethers, Gattermann reaction with, A., II, 16.
- α-Methoxydiphenylacetic acid, A., II, 77.
- 3-Methoxy-5:5-diphenyl-5:10-dihydroacridine, A., II, 276.
- 2-Methoxy-2:4-diphenyl-3:4-dihydrocoumarino-3':4'-5:6-1:2-pyran, A., II, 345.
- 1-Methoxy-9:9-diphenylfinorene, and 2(or 4)-bromo-, A., II, I14.
- 3-Methoxy-1:1-diphenylindane, A., II, 193.
- 7-Methoxy-2:2-diphenyl-4-methyl-1:2benzpyran, A., II, 23.
- 7-Methoxy-2:2-diphenyl-4-methyl-4³-chromen. See 7-Methoxy-2:2-diphenyl-4-methyl-1:2-benzpyran.
- 3-Methoxy-10-γ-di-n-propylamino-n-propylphenothiazine, A., II, 353.

- a-Methoxy-d-erythrosuccinic acid, β -hydroxy-, bismethylamide of, A., II, 213.
- a-Methoxy-l-erythrosuccinic acid, β-hydroxy-, derivatives of, A., II, 212.
- β-Methoxy-d- and -l-erythrosuccinic acids, a-hydroxy-, bismethylamides, A., II, 213. 2-Methoxy-3-ethoxybenzoic acid. A., II, 370.
- 4-Methoxy-3-ethoxy-6-carboxymethylphthalide, A., II, 370.
- 4-Methoxy-3-ethoxy-6-chloromethylphthalide, A., II, 370.
- 2-Methoxy-3-ethoxycinnamic acid, A., II, 370. 3-Methoxy-2-ethoxycinnamic acid, A., II, 370.
- 4-Methoxy-3-ethoxy-6-cyanomethylphthalide, A., II, 370.
- 3-Methoxy-5-ethoxy-4-ethylbenziuran, A., II, 199.
- 2-Methoxy-4-ethoxy-6-hydroxy-3-ethylbenzaldehyde, p-nitrophenylhydrazone, A., II 199.
- 4-Methoxy-3-ethoxy-6-hydroxymethylphthalide, A., II, 370.
- 3-Methoxy-2-ethoxy-5-methylbenzoic acid, A., II, 370.
- 3-Methoxy-2-ethoxy-5-methylcinnamic acid, A., II, 370.
- 4-Methoxy-3-ethoxy-2-methylcinnamic acid, A., II, 370.
- 2-Methoxy-6-ethoxymethyl-4- γ -hydroxy-n-propylphenol, $d\imath$ -p-nitrobenzoate, A., II, 167. β -3-Methoxy-2-ethoxy-5-methylphenylpropionic
- acid, A., II, 370. 8-4-Methoxy-3-ethoxy-2-methylphenylpropionic acid, A., II, 370.
- 4-Methoxy-3-ethoxy-6-methylphthalide, A., II, 370.
- β-2-Methoxy-3-ethoxyphenylpropionic acid, A., II, 370.
- β-Methoxyethyl p-toluenesulphonate, A., II, 293.
 4-Methoxy-2-ethylbenzaldehyde, and its azine, A., II, 13.
- 4'-Methoxyflavanone-7:3'- β -d-diglucoside, 7:3'-dihydroxy-, A., II, 252.
- 4'-Methoxyflavone-7-β-d-glucoside, 7:3'-dι- and 3:7:3'-tri-hydroxy-, A., II, 252.
- 5-Methoxyflavylium chloride, 3:4'-dihydroxy-, A., II, 232.
- 3-Methoxy-5:8:9:10:13:14-hexahydrophenanthrene-14-carboxylic acid, A., II, 281.
- trans-2-Methoxycyclohexanol, acetate and 3:5-dinitrobenzoate of, A., II, 90.
- ε-Methoxyhexoic acid, α-bromo-, and its ethyl and methyl esters, A., II, 168.
- 5-Methoxyhydrindene, derivatives of, A., II, 226.
- 5-Methoxy-1-hydrindone, nitrophenvlhydrazones, A., II, 226.
- 5-Methoxy-1-hydrindone, 2-bromo-, and 2-cyano-, and their derivatives, A., II, 226.
- 2-Methoxy-4-4'-hydroxy-3'-methoxyphenyl-3:4-dihydrocoumarino-3':4'-5:6-1:2-pyran, A., II, 345.
- 5-Methoxy-2-hydroxymethylene-1-hydrindone, and its bis-2:4-dinitrophenylhydrazone, A., II, 226.
- 2-Methoxy-6-hydroxymethyl-4-y-hydroxy-npropylphenol, 5-bromo-, and its tri-pnitrohenzante A II 167
- nitrobenzoate, A., II, 167.

 5-Methoxy-2-1'-keto-5'-methoxy-2'hydrindenylidenemethyl-1-hydrindone, A., II,
- 226.
 3-Methoxymandelic acid, 4-hydroxy-, and its derivatives, A., II, 263.
- 2- α -Methoxymesophyllochlorin, methyl ester, A., II, 312.
- 7-Methoxy-2-4'-methoxybenzylnaphthalene, A., II. 94.
- p-Methoxy-a-4-methoxyphenacylcinnamic acid, A., II, 94.
- β-3-Methoxy-2-methoxyphenylpropionic acid, A., II, 370.
- 7-Methoxy-3-6'-methoxy-1':2':3':4'tetrahydro-1'-naphthyl-1:2-dihydronaphthalene, A., II, 226.
- p-Methoxymethylacetophenone, phenylhydrazone, A., II, 218.
 4-Methoxy-3-methylacetophenone, 6-chloro-, and

its furfurylidene derivative, A., II, 18.

- 4-Methoxy-6-methylacetophenone, 3-hydroxy-, A., II, 370.
- 6-Methoxy-4-methylacetophenone, 2-hydroxy-, A., II, 49.
- 3-Methoxy-5-methylbenzaldehyde, 1-hydroxy-, oxime, A., II, 370.
- 2-Methoxy-5-methyl- β -benzylcinnamic acid, ethyl ester, A., II, 344.
- 2-Methoxy-5-methyl- β -benzylcinnamic acid, 3-chloro-, ethyl ester, A., II, 344.
- y-Methoxy-y-methyl-Δα-butene, δ-iodo-, A., II, 245.
- γ-Methoxy-α-methylbutyric acid, and its amide, A., II, 280.
- trans-2-Methoxy-5-methylcinnamic acid, and its ethyl ester, A., II, 161.
 a-Methoxy-y-methyl-y-n-decolactone, A., II,
- 162.

 N-Methoxymethyl-N'-y-dimethylamino-n-
- propylcarbodi-imide, and its methiodide, A., II, 185.
- N-Methoxymethyl-N'-y-dimethylamino-n-propylthiocarbamide, A., II, 185.
- 5-Methoxy-2-methylfurano-3':2'-6:7-chromone, A., II, 199.
- 2-Methoxy-5-methyl-Δ^{2:7}-naphthitadiene-1:4-dione, A., II, 138.
- 4-Methoxy-2-methylcyclopentane-1:3-dione, A., II, 138. 4-Methoxy-1-methylphenanthrene-1-carboxylic
- acid, and its ethyl ester, A., II, 338. a-(4-Methoxy-2-methylphenyl)isobutyrie acid,
- A., II, 302. a-(4-Methoxy-4-methylphenyl) isobutyrio acid,
- A., II, 302. a-(2-Methoxy-4-methylphenyl)methoxytoluic acid, A., II, 302.
- 4-Methoxymethylpiperidine, and its derivatives, A., II, 169.
- 4-Methoxymethyl-2-piperidone, A., II, 169. N-4-Methoxy-2-methyl-5-isopropylbenzyl-
- ethylenediamine, A., II, 366. 6-Methoxy-5-methyl-1:2:3:4-tetrahydro-
- naphthalene, A., II, 18.

 8-Methoxynaphthalene, 2-amino-, and its
 2-acetyl derivative, and hydrochloride, A., II,
- 347.
 7-Methoxy-2-naphthoic acid, A., II, 281.
- β -2-Methody-2-naphthold acid, A., 11, 201. β -2-Methody-1-naphthylacrylic acid, and its
- ethyl ester, A., II, 161. β -6-Methoxy-2-naphthyladipic acid, A., II, 266.
- β -6-Methoxy-2-naphthyladipic acid, β -hydroxy-a-methyl-a'-hydrogen ester, A., II, 266.
 - 5-Methoxy-2-naphthylamine, and its derivatives, A., II, 347.
- β-6-Methoxy-2-naphthyl-Δα-butene-αδdicarboxylic acid, A., II, 266.
- β-2-Methoxy-1-naphthyl-a-methylacrylic acid, and its ethyl ester, A., II, 161.
- 1-6'-Methoxy-2'-naphthylcyclopentene, semicarbazone of, A., II, 266.
- carbazone of, A., II, 266. 3-6'-Methoxy-2'-naphthyl-△2-cyclopentenone, A., II, 266.
- 5-Methoxy-1-p-nitrophenyl-3-methyl-5pyrazolone, 4-hydroxy-, A., II, 203.
- 2-Methoxy-2-m-nitrophenyl-3-p-nitrophenyl-\(\delta^3\)-chromene, A., II, 232.
- o-Methoxypalmitic acid, θι-dihydroxy-, and its methyl ester, A., II, 179.
- 4-Methoxy-1:2-cyclopentadienonaphthalene-3'acetic acid, and its ethyl ester, A., II, 18.
- 4-Methoxy-1:2-cyclopentenonaphthalene-3'-acetic acid, A., II, 18.
- a-p-Methoxyphenacylbntyric acid, and its methyl ester and semicarbazone, A., II, 78.
- a-p-Methoxyphenacylcinnamic acid, A., II, 94. a-p-Methoxyphenacylheptoic acid, and it
- methyl ester and semicarbazone, A., II, 78. a-p-Methoxyphenacylhexadecoic acid, and its
- methyl ester, A., II, 78.

 a-p-Methoxyphenacyloctadecoic acid, and its esters, and semicarbazone, A., II, 78.
- a-p-Methoxyphenacyloctoic acid, and its semicarbazone, A., II, 78.
 a-p-Methoxyphenacyl-β-phenylpropionic acid,
- A., II, 94.

 a-p-Methoxyphenacylpropionic acid, ethyl and methyl esters, A., II, 78.

- α-p-Methoxyphenacylvaleric acid, and its semicarbazone, A., II, 78.
- 3-Methoxyphenothiazine, acetyl derivative, A., II, 353.
- p-Methoxyphenylacetic acid, ethyl ester. dihydroazine, A., II, 13.
- 5-Methoxyphenylacetic acid, 2-nitro-, A., II,
- 5-Methoxyphenylacet-β-3':4'-methylenedioxyphenylethylamide, 2-nitro-, A., II, 355.
- 3-Methoxyphenylacetone, 4-hydroxy-, 4-acetyl derivative, and its semicarbazone, A., II,
- p-Methoxy- γ -phenyl- β -p-anisyl-n-butyrophenone, and its semicarbazone, A., II, 12.
- p-Methoxy- μ -phenyl- β -p-anisylpropiophenone, A., II, 12.
- 3-Methoxy-2-phenylbenzopyrilium perbromide, and chloride, and its derivatives, A., II, 110. y-3-Methoxyphenylbutyric acid, y-4-hydroxy-
- A., II, 372. 5-Methoxy-a-phenylcinnamic acid, 3-hydroxy-, A., II, 192.
- 3-Methoxyphenylethane, a\beta-dibromo-\beta-nitro-a-5bromo-4-hydroxy-, A., II, 257. αβ-dibromo-β-nitro-α-5:6-dibromo-4
 - hydroxy-, A., II, 257.
- $N-\beta-4$ -Methoxyphenylethyl-N-methylcarbamide, N-B-3-bromo-, and N-B-3-chloro-, A., II, 255.
- 2-Methoxy-4-phenyl-2-o-hydroxyphenyl-3:4dihydrocoumarino-3:4'-5:6-1:2-pyran, A., II, 345.
- 2-Methoxy-4-phenyl-2-methyl-3:4dihydrocoumarino-3':4'-5:6-1:2-pyran, A., II, 345.
- p-Methoxyphenyl methyl ketone, bis-2:4-dinitrophenylhydrazone, A., II, 296.
- 4-(3'-Methoxyphenyl)-1-methylpiperidine-4carboxylic acid, 4-2'-hydroxv-, lactone, A., II,
- 4-(2'-Methoxyphenyl)-1-methylpiperidme-4nitrile, A., II, 272.
- 3-Methoxy-1-phenylnaphthalene-2'-carboxylic acid, A., II, 373.
- 3-Methoxyphenylpropan- β -one, a-bromo-a-4hydroxy-, a-4-acetyl derivative, and its semicarbazone, A., II, 262.
 - y-chloro-a:a-4-dihydroxy-, diacetyl derivative, A., II, 263.
 - a:a-4-dihydroxy-, diacetyl derivative, A., II, 262.
- 3-Methoxyphenylpyruvic 5-bromo-4acid. hydroxy-, 6-ehloro-4-hydroxy-, and 5-iodo-4hydroxy, and their derivatives, A., II, 60.
- 6-Methoxy-2-phenylquinoline, N-oxide of, A., II, 309.
- 2-Methoxy-4-phenyltriphenylcarbinol, A., II, 114.
- 4-Methoxyphenyl vinyl ketone, 2-hydroxy-2:4-dinitrophenyl hydrazone, A., II, 272.
- 5-Methoxyisophthalic acid, 4-hydroxy-, A., II,
- 4-Methoxy-2-piperidone-3-carboxylic acid, ethyl ester, A., II, 169.
- 3-Methoxy-5-propenylbenzoic acid, 2-hydroxy-, and its acetate and methyl ester, A., II, 161.
- 2-β-Methoxypropionyl-9:10-dihydrophenanthrene, A., II, 11.
- 9-<-6'-Methoxy-8'-quinolylamino-n-amylamino-2-methoxyacridine, 6-chloro-, hydrochloride, A., II, 83.
- 9-8-6'-Methoxy-8'-quinolylamino-nbutylamino-2-methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83.
- $10-\beta-6'$ -Methoxy-8'-quinolylaminoethylphenothiazine, A., II, 353.
- 5-(6'-Methoxyquinolyl-8'-y-aminopropylamino)-7-methoxyacridine, 2-chloro-, and its dihydrochloride, A., II, 56.
- 9-y-6'-Methoxy-8'-quinolylaminopropylamino-2-methoxyacridine, 6-chloro-, dihydrochloride, A., II, 83.
- 6'-Methoxyrubans, 9-hydroxy-, synthesis of, A., II, 383.
- 6'-Methoxyruban-9-ols, and their derivatives, A., II, 383.

- 3-Methoxystyrene, 2-, 5-, and 6-bromo-β-nitro-4-hydroxy-, 5-bromo-2-β-dinitro-4-hydroxy-, and 5:6-dibromo-β-nitro-4-hydroxyβ:5:6-tribromo-β-nitro-4-hydroxy-, 5:β-dinitro-4-hydroxy-, A., II, 257.
- 5-p-Methoxystyryl-3-methylisooxazole, 4-nitro-, A., II, 238.
- 6-Methoxy-4:5:6:7-tetrahydrobenzthiazole, 2-amino-, A., II, 314.
- 2-Methoxytetrahydrofuran, A., II, 151.
- 6-Methoxy-1:2:3:4-tetrahydronaphthalene, derivatives of, A., II, 226.
- 6-Methoxy-1:2:3:4-tetrahydronaphthalene, 1-hydroxy-, acetyl derivative, A., II, 226, 295.
- 8-Methoxy-1:2:3:4-tetrahydronaphthalene-5carboxylic acid, and its methyl ester, A., II,
- 8-Methoxy-1:2:3:4-tetrahydronaphthalene-5carboxylic acid, 7-chloro-, A., II, 221.
- 6-Methoxy-1:2:3:4-tetrahydro-2-naphthoamide, A., II, 221.
- 6-Methoxy-1:2:3:4-tetrahydro-2-naphthoic acid, A., II, 221.
- 7-Methoxy-1:2:3:4-tetrahydro-2-naphthylacetic acid, 1-hydroxy-, and its lactone, A., II, 77.
- a-7-Methoxy-1:2:3:4-tetrahydro-1-naphthylpropionic acid, α-I-hydroxy-, ethyl ester, A.,
- a-7-Methoxy-1:2:3:4-tetrahydro-2-naphthylpropionic acid, a-1-hvdroxy-, and its lactone, A., II, 77.
- a-7-Methoxy-1:2:3:4-tetrahydro-1-naphthylpropionolactone, α-2-hydroxy-, A., II, 77.
- 4-Methoxytoluene, 3:o-dihydroxy-, A., II, 49. 2-nitroso-3:5-dihydroxy-, A., II, 49. Methoxytolnic acid, nitro-, A., II, 302.
- 4-Methoxy-2:5-toluquinone, 3-hydroxy-,
- synthesis of, A., II, 49. -6-Methoxy-m-tolyl-a-alkylbutyrolactones, A.,
- II, 259. y-6-Methoxy-m-tolyl-a-n-amylbntyrolactone, A.,
- II, 259. γ -6-Methoxy-m-tolyl- α -ethylbutyrolactone,
- II, 259. 2-(6'-Methoxy-m-tolyl)furan- $5-\beta$ -propionie acid,
- 4'-chloro-, A., II, 18. γ -6-Methoxy-m-tolyl- α -n-propylbutyrolactone,
- A., II, 259.
- 6-Methoxy-2:4:5-trimethylbenzaldehyde, 3-hydroxy-, A., II, 200.
- 7-Methoxy-2:2:4-trimethyl-1:2-benzpyran, II, 23.
- chloride, 6-Methoxy-2:4:5-trimethylbenzyl 3-hydroxy-, A., II, 200.
- 6-Methoxy-2:4:5-trimethylbenzylacetoacetic acid, 3-hydroxy-, and its ethyl ester, A., II,
- 9-Methoxy-1:2:9-trimethyl-9:10-dihydroanthracene, A., II, 42.
- 2-Methoxy-2:4:4-trimethyl-3:4-dihydre-
- coumarino-3':4'-5:6-1:2-pyran, A., II, 345. 3-Methoxy-1:2:5-trimethylnaphthalene, A., II,
- a-6-Methoxy-2:4:5-trimethylphenyl- Δ^a -buten- γ -
- one, a-3-hydroxy-, A., II, 200.
- β -6-Methoxy-2:4:5-trimethylphenylethylmethyl ketone, β -3-hydroxy-, A., II, 200. δ-6-Methoxy-2:4:5-trimethylphenyl-\(\rho\)-methyl-n-
- butan-β-ol, δ-3-hydroxy-, A., II, 200. a-6-Methoxy-2:4:5-trimethylphenyl-y-methyl-
- n-heptan-γ-ol, a-3-hydroxy-, A., II, 200.
- a-6-Methoxy-2:4:5-trimethylphenyl-y-methyl-npentadecan-y-ol, a-3-hydroxy-, A., II, 200.
- α-6-Methoxy-2:4:5-trimethylphenyl-γ-methyl-n-pentan-γ-ol, α-3-hydroxy-, A., II, 200. 3-Methoxytriphenylcarbinol, 5-chloro-, 5-fluoro-,
- and 5-iodo-, A., II, 114. Methoxyuvitinaldazine, A., II, 371.
- Methoxyuvitinaldehyde, di(propionylhydrazone), A., II, 371.
- a-Methoxy-a-veratrylethylene oxide, A., II, 162. l-6'-Methoxy-3-vinylrnban-9-ol, l-2'-hydroxy-, and its derivatives, A., II, 383.
- 6-Methoxy-3-xanthyl-2-methylquinoline, 4-hydroxy-, A., II, 239. Methyl alcohol, heat of association of, in tetrachloromethane, A., I, 104.

- Methyl alcohol, in tissue staining, A., III, 161. poisoning by. See under Poisoning. ultrasonic wave velocity in mixtures of, with
- water, A., I, 33. Methyl bromide, adsorption of, and radioactive
- exchange with inorganic bromides, A., I,
 - azeotrope of, with bromine, A., I, 203. determination of, C., 138.
 - by ethanolamine hydrolysis, C., 165. poisoning by. See under Poisoning. use of, against firebrat, C., 87.
 - in place of methyl iodide in Zerevitinov determination, C., 19.
- δ-bromo-n-butyl ether, A., II, 168.
- chloride, inflammability of, in mixtures with air and with dichlorodifluoromethane, A.,
- ether, boron trifluoride compound of, dissociation of, A., I, 126.
 - energy of, from equilibrium with methyl alcohol, A., I, 39.
- β -ethyl-n-hexyl ether, A., II, 211. β -heptyl ether, A., II, 211.
- iodide, reaction of, with silver perchlorate, A., I, 252.
- Methylacetoacetic acid, ethyl ester, condensation of, with ethyl chlorofumarate, A., II, 17.
- C-Methylacetoacetic acid, ethyl ester, acidity and diazomethane reaction of, A., II, 181.
- 6-Methylacetophenone, 3:4-dihydroxy-, A., II, 370
- α -Methyl- β -acetoxymethyl-n-butyric β -hydroxy-, ethyl ester, β -acetate, A., II, 181. Methylacetylene, equilibrium of, with allene, A.,
- I. 84. 5-amino-5-hydroxy-, and
- 10-Methylacridan, 5 5-imino-, A., II, 24. 10-Methylacridan-5-carboxylic acid and its
- β-diethylaminoethyl ester, hydrochloride, A., 10-Methylacridinium bromide, 5-amino-, A., II,
- 24. h-Methylacrylie acid, cyanomethyl ester, A., II,
- 17-Methylætioallocholanic acid, 3(β)-hydroxyand 3(a):12(β)-dihydroxy-, 3(β)-mono- and 3(a):12(β)-diacetyl derivatives, methyl esters, A., II, 267.
- β-Methylallyl cyanide, A., II, 287. 5-Methyl-8-allylcoumarin, 7-hydroxy-, A., II,
- a-Methylallylphthalimide, and its unsymmetrical isomeride, A., II, 37.
- α -Methyl- β -allylstilbene, 4:4'-dihydroxy-, A., II,
- Methylamine, photolysis of, A., I, 132.
- Methylamines, basic strength of, A., I, 175. parachors and surface tensions of, A., I, 99.
- 3-amino-, 4-Methylaminoacetophenone, 3-nitro-, A., II, 297.
- 5-Methylaminoacridine, A., II, 24. p-Methylaminobenzeneazo- β -naphthol, and its
- hydrochloride, A., II, 331. $p ext{-Methylaminobenzeneazo-}\beta ext{-naphthol},$
- p-N-nitroso-, A., II, 331. 4-Methylamino-5-p-chlorobenzeneazo-2-
- methylpyrimidine, 6-amino-, A., II, 350. 4-Methylamino-3:4-dihydrohomocamphor,
- its nitrosoamine and picrate, A., II, 268. bromide, 4-Methyl-3- β -aminoethylthiazolium
- hydrobromide, A., II, 313. β-Methylaminoheptane, pharmacological action
- of, A., III, 494. 2-Methyl-1-aminomethylcyclopentanol, and its
- hydrochloride, A., II, 194. 3-Methyl-1-aminomethylcyclopentanol, A., II,
- 4-Methylamino-2-methylpyrimidine, A., II, 350.
- 8-y-Methylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.
- 9-Methyl-10-n-amylanthracene, and its picrate, A., II, 255.
- See $\beta\beta$ -Di-n- β -Methyl- β -n-amyloctoic acid. amylbutyric acid.
- 2-Methyl-3:6-anhydro-a-methylgalactopyranoside, A., II, 214.

- 4-Methyl-3:8-anhydro-a-methylgalactopyranoside, A., II, 214.
- Methylaniline, p-amino-, preparation of, and its picrate, A., II, 331.

p-iodo-N-nitroso-, A., II, 331.

- β -(N-Methylanilino)anethole, A., II, 75. 2-Methylanilino-1:2:3:4:5:6-hexaphenyl-
- dihydroisomelamine, A., II, 191.
- B-N-Methylanilinopropionitrile, and its picrate, A., II, 291.
- y-N-Methylanilino-n-propylamine, and hydrobromide and picrate, A., II, 291.
- Methyl- β -p-anisylethylamine, and its salts, A., III, 856.
- 2-Methylmesobenzanthrone, and its derivatives. A., II, 164.
- 2-Methylmesobenzanthrone, 3-amino-, 3-bromo-, 3-chloro-, and 3-nitro-, A., II, 164. 3-hydroxy-, and its methyl ether, A., II, 164.
- 2-Methyl-5:6-benzcoumaran, 4-hydroxy-, and its acetate, A., II, 128.
- 3-Methyl-6:7-benz-1-hydrindone-2-acetic ethyl ester, A., II, 338. acid.
- 3-Methyl-6:7-benz-1-hydrindone-2-acetic 3-hydroxy-, lactone, A., II, 338.
- 2-Methylbenziminazole, 2-iodo-, A., II, 84.
- 2-Methylbenziminazole-5-sulphonamide, A., II, 313.
- 3-Methyl-6:7-benz-1-indone-2-acetic acid, and its ethyl ester, A., II, 338.
- p-Methylbenzoic acid, p-amino-, β-diethyIaminoethyl, ethyl, β -piperidinoethyl, γ -piperidino-n-propyl, and γ -morpholinon-propyl esters, hydrochlorides, A., II, 134.

p-acctyl derivative, A., II, 369.

- , m-, and p-Methylbenzophenones, semi-carbazone, of A., II, 223.
- p-Methylbenzoyl chloride, p-amino-, hydro-chloride, A., II, 134.
- Methylbenzthiazole, organo-metallic derivatives of, A., II, 352, 353.
- 2-Methylbenzthiazole, 6-hydroxy-, 6-allyl ether, and its picrate, A., II, 205.
- 4-Methylbenzthiazole, 2-nitro-, A., II, 146. 6-Methylbenzthiazole, 2-nitro-, A., II, 146.
- o-Methylbenzyl alcohol, synthesis of, from crotonaldehyde and ethyl alcohol, with
- contact catalyst, A., II, 192. 3-Methylbenzyl alcohol, 2- and 4-hydroxy-, A., II, 14.
- β -N-Methylbenzylamino- α -piperidino- β phenylpropiophenone, A., II, 279.
- -p-Methylbenzylethylenediamine, A., II, 366. o-Methylbenzylsuccinic acid, and its derivatives, A., II, 329.
- Methylbixin, stereochemistry of, A., II, 210.
- 2-Methyl-5- β -bromoethylpyrimidine, 4-amino-, hydrobromide, A., II, 83.
- N-Methylsec.-ψ-brucine, A., II, 64.
- Methylbutadienes, hyperconjugation in, A., I, 29. y-Methyl- $\Delta^{\alpha\gamma}$ -butadiene, $\alpha\beta$ -dichloro-, A., II, 245. s- and $trans-\gamma$ -Methyl- $\Delta^{a\gamma}$ -butadienes, $a\beta$ -dibromo-, A., II. 245. cis-
- β -Methylbutane, $\alpha \gamma$ -dibromo- $\beta \gamma$ -dihyaroxy-, A., II, 245.
- y-Methylbutane, aβδ-tribromo-y-hydroxy-, A., II, 245.
- a-Methylbutane-aβδ-tricarboxylic acid, A., II, 374.
- β -Methylbutane- $a\beta\delta$ -tricarboxylic acid, ethyl ester, action of sodium on, A., II, 101, 339.
- a-nitro-, γ -Methylbutan- β -ol, a-naphthylurethane of, A., II, 247.
- 4-Methylbutein-4'-glucoside, A., II, 252.
- β -Methyl- $\Delta \gamma$ -buten- β -ol, $\gamma \delta$ -dibromo-, A., II,
- a-Methyl-Δβ-butenonitrile, A., II, 250.
- $4-\delta-N-Methyl-N-butylamino-a-methyl-n$ butylamino-6-methoxyquinoline, dihydrochloride, A., II, 379.
- 9-Methyl-10-n-butylanthracene, and its picrate, A., II, 255.
- y-Methyl-Δα-butylene, δ-bromo-y-hydroxy-, and its acetate, A., II, 245.
- 1-Methylcyclobutylene, structure of, A., I, 196.
- 4-Methyl-2-tert.-butylcyclohexanols, and their naphthylurethanes, A., II, 160.

- Methyl n-butyl ketone, photodecomposition of, A., I, 21.
- O-Methylisocarbamide hydrochloride, spectrum of, Raman, A., 1, 29.
- $N ext{-Methyl-}N ext{-carbethoxymethyl-}N ext{-cetyl-}$ hydrazinium bromide, A., II, 183.
- Methylcarbinols, differentiation of, from methyl ketones, C., 166. β-Methylcellobiose heptanitrate,
- absorption by, A., I, 283. Methyl-a-D-cellobioside, tetra-p-benzeneazo-

acctone

- benzoate, A., II, 6. Methylcellulose, as colloid laxative, A., III, 360. fate of, in digestive tract in man, A., III, 742. ingestion of, effect of, on rats, A., III, 265.
- 1-Methyl-2-a-chloroethylbenziminazole, A., II, 84.
- Methyl β -chloroethyl formal, A., II, 272.
- 4-Methyl-5- γ -chloro- β -hydroxy-n-propylthiazole, 2-amino-, and its picrate, A., II, 205.
- 1-Methyl-2-chloromethylbenziminazole, A., II,84. ${\tt a-Methyl-} {\it B-chloromethyl-} n{\tt -butyric}$
- β -hydroxy-, ethyl ester, A., II, 181. 5-Methyl-2-chloromethyl-2:3-dihydrofuran, 4-chloro-, A., II, 205.
- Methylcholanthrene, cancer due to, A., III, 120, 477.
 - in mice, A., III, 660.
 - effect of breeding on, A., III, 597.
 - effect of, on epidermal calcium and sodium, A., III, 262.
 - leukæmogenic action of, enhancement of, by X-rays, A., III, 481.
 - tumour induction with, in guinea-pigs, A., III, 661.
- 20-Methylcholanthrene, fluorescence of, A., I, 3. 20-Methylcholine, histological location of, after application to mouse skin, A., III, 195.
- 3-Methylchroman, 2:4-dihydroxy-, A., II, 199. a-Methylcinnamic acid, cyanomethyl ester, A., II, 213.
- Methylcolchiceine, A., II, 48.
- 6-Methylcoumarin, β -4-hydroxy-, glucoside of, and its tetra-acetate, A., II, 345.
- 1-Methyl-2-cyanomethylbenziminazole, A., II,84. N-Methylcystisine, pharmacological action of, A., III, 494.
- 4-Methyldecahydro-1:8-naphthyridine, and its picrate, A., II, 237.
- 1-Methyl- $\Delta^{7;9(14)}$ -decahydrophenanthrene, A., II, 255.
- 12-Methyldecahydroretene, A., II, 255.
- β -Methyl-n-decan- ϵ -ol, A., II, 248.
- δ-Methyldecan-β-ol, α-naphthylurcthane. II, 178.
- Methyl-n-decan-ε-one, and its hydantoin and nitroguanylhydrazone, A., II, 248.
- β -Methyl- $\Delta\beta$ -n-decen- ϵ -ol, A., II, 247.
- β -Methyl- $\Delta \gamma$ -n-decen- ϵ -one, and its hydantoin derivative, A., II, 247.
- δ-Methyldec- β -en- ϵ -yn- δ -ol, A., II, 178.
- δ -Methyldec-y-en- ϵ -yn- β -ol, and its α -naphthylurethane, A., II, 178.
- y-Methyl-y-n-decolactone, A., II, 162.
- y-Methyl-y-n-decolactone, a-bromo-, A., II, 162. a-Methyldecylidenecyanoacetic acid, ethyl ester, A., II, 180.
- α-Methyl-δ-decylpentadecoic acid, A., II, 70.
- β -Methyl- β -decylpentadecoic acid, and its amide and methyl ester, A., II, 70.
- a-Methyl-a-decyl-n-tetradecoic acid, and its amide, A., II, 69.
- N-Methyl-de-delphonine, A., II, 355.
- 2-Methyl-5:7-diallylbenzthiazole, 6-hydroxy-, and its 6-allyl ether, picrate, A., II, 205.
- Methyldiallylcarbinyl acetate. See β-Allyl-48pentenyl B-acetate.
- 9-Methyl-1:2:3:4-dibenzphenanthrene, and its picrate, A., II, 363.
- 10-Methyl-1:2:3:4-dibenzphenanthrene, A., II, 363.
- Methyldi-n-butylamine, A., II, 35. Methyl $a\beta$ -dichlorovinyl ketone, A., II, 149.
- Methyldi-n-dodecylamine, A., II, 35. A., II, 2-Methyl-1- β -diethylaminoethylindole,
- 6-Methyl-5:5-diethyl-2:4-dithiobarbituric acid. A., II, 203.

- 1-Methyl-3:5-diethylcyclohexane, A., II, 160. 4-Methyl-2:6-diethylcyclohexanols, a-naphthyl-
- urethane, A., II, 160. 3-Methyl-3:5-diethyloxazolidine-2:4-dione, II. 382.
- 3-Methyl-2:5-dihydroanisole, A., II, 368.
- 9-Methyl-9:10-dihydroanthracene-9-carboxylic acid, β -diethylaminoethyl ester, hydrochloride, A., II, 16.
- 10-Methyl-9:10-dihydroanthracene-9-carboxylic acid, and its β -diothylaminoethyl ester, hydrochloride, A., II, 16.
- 9-Methyl-9:10-dihydro-1:2:3:4-dibenzphenanthrene, picrate, A., II, 363.
- 10-Methyl-9:10-dihydro-1:2:3:4-dibenzphenanthrene, and its s-trinitrobenzene compound, A., II, 363.
- 1-Methyl-1:2-dihydroquinoline, 2:2-dichloro-, A., II, 201.
- 4'-Methyl-4-3':4-dimethoxybenzylidene-2methylpyrazol-5-one, 5'-bromo-. and 5'-chloro-, A., II, 59.
- 3-Methyl-4-aa-dimethylamylphenol, A., II, 302. Methyldi-n-octylamine, A., II, 35.
- 4-Methyl-1:3-dioxan, A., II, 245.
- 5-Methyl-1:3-dioxan, 6-hydroxy-, 6-acetate, A., II, 233.
- 3-Methyldiphenyl-4-acetic acid, A., II, 160.
- dl-Methyl-aβ-dipropylcarbinol, phenylurethano, A., II, 118.
- 3-Methyl-3:5-di-n-propyloxazolidine-2:4-dione, A., II, 382.
- 6-Methyl-1:5-dicyclouracil, 5-chloro-6-hydroxy-, oxide of, reactions of, A., II, 171.
- 1-Methyldodecahydrophenanthrene, A., II, 255. 12-Methyl-49(14)-dodecahydroretene, A., II, 255.
- β -Methyldodecoamide, A., II, 180. Methyl-n-dodecylamine, hydrochloride of, A., II. 35.
- N-Methyl-N-n-dodecylhydrazine hydrochloride, A., II, 184.
- N-Methyl-N-n-dodecylhydrazinium N-cyano-, A., II, 184.
- β-Methyl-a-n-dodecyl-lauric acid, and its amide, A., II, 70.
- γ -Methyl- β -n-dodecyltridecoic acid, and its amide, A., II, 70.
- Methylene bromide, vapour, sp absorption, infra-red, A., I, 77. spectrum
 - dichloride, inflammability of, in mixtures with nitrogen and oxygen, A., I, 64. dibenzyl ether, A., II, 208.
 - di-β-chloroethyl ether, A., II, 208.
- dihalides, spectra of, Raman, A., I, 192.
- 3:3'-Methylenebis-6-bromo-4-hydroxycoumarin, A., II, 303.
- 3:3'-Methylenebis-4-coumarin glucoside tetraacetate, A., II, 345.
- Methylenebis-β-glycerol, and its tetrabenzoate, A., II, 119.
- ${\bf Methylenebis-2-} D{\bf -glycerose}$ disemicarbazone dibenzoate, A., II, 119.
- 3:3'-Methylenebis-4-hydroxycoumarin, hæmorrhagic agent, A., III, 392.
- blood coagulability control with, A., III, 523.
- derivatives of, A., II, 167, 344, 345. effect of administration of, A., III, 165.
- in liver disease, A., III, 10. on blood clotting, A., III, 324.
- on gangrene and trauma, A., III, 392.
- heparin and, A., III, 453. salicylates in urine after, non-appearance of,
- A., III, 834. treatment with, of thrombosis, A., III, 11,
- 575. Methylenebis-1-morpholinium di-n-alkyl
- dibromides, A., II, 313. Methylenebis-1-piperidinium di-n-alkyl
- dibromides, A., II, 309. 3:3'-Methylenebis-4-salicyloxycoumarin, A., II,
- Methylene-blue, determination of, C., 23. diffusion of, through paper membranes, A., I, 152.
- Methylenecyclobutane, structure of, A., I, 196.
- NN'-Methylene-\psi-isocyanine chloride, fluorescence of, A., I, 3.

- Methylenedihydrolanostenone, hydroxy-, A., II,
- 6:7-Methylenedioxy-3-acetyl-2-methylquinoline, and its picrate, A., II, 308.
- 6:7-Methylenedioxy-3-acetylquinoline-2carboxylic acid, ethyl pyridazinone, A., II, 307. ester, and
- 6:7-Methylenedioxy-1:2'-amino-5'-methoxybenzyl-2-methyl-1:2:3:4-tetrahydroisoquinoline d:hydrochloride, A., II, 355.
- 3':4'-Methylenedioxybenz-1':6'-2:3-1azafluorenone, and its derivatives, A., II, 308. 3':4'-Methylenedioxybenz-1':6'-2:3-4-
- azafiuorenone, and its derivatives, A., II, 308. 6:7-Methylenedioxy-3-benzoylquinoline-2-
- carboxylic acid, ethyl ester, A., II, 307. 3:3'-3":4"-Methylenedioxybenzylidenebis-4hydroxycoumarin, A., II, 166.
- a-3:4-Methylenedioxybenzylidene-nheptaldehyde, semicarbazone, A., II, 222.
- 8:7-Methylenedioxy-1-o-nitrobenzyl-3:4dihydroisoquinoline, and its methiodide, A., II, 383.
- 6:7-Methylenedioxy-1-o-nitrobenzyl-2-methyl-1:2:3:4-tetrahydroisoquinoline, dahydrochloride, A., II, 383.
- 6:7-Methylenedioxy-1-2'-nitro-5'-methoxybenzyl-3:4-dihydroisoquinoline, its methiodide, A., II, 355.
- β -Methylenedioxyphenyl- α -methylethylearbamic acid, N- β -chloro-, and N-chloro-N- β -chloro-, ethyl esters, A., II, 364.
- β -3:4-Methylenedioxyphenylpropionamide, β -x-chloro-, A., II, 355.
- 6:7-Methylenedioxy-2-phenylquinoline-3carboxylio acid, and its ethyl ester, A., II, 308.
- 6:7-Methylenedioxy-3-phenylquinoline-2-
- carboxylic acid, A., 1I, 307. 4:5-Methylenedioxyisophthalaldehyde, A., 162
- 5:6-Methylenedioxyphthalaldehydic acid, A., II, 162.
- 4:5-Methylenedioxyisophthalic acid, and its dimethyl ester, A., II, 162.
- 5:6-Methylenedioxyphthalide, A., II, 162.
- 6:7-Methylenedioxyquinoline, and its picrate, A., II, 307.
- 6:7-Methylenedioxyquinoline, 2-hydroxy-, A., II, 308.
- 6:7-Methylenedioxyquinoline-2-aldehyde, phenylhydrazone, and its hydrochloride, A., II, 308.
- and 6:7-Methylenedioxyquinoline-2-aldoxime, its picrate, A., II, 308.
- 6:7-Methylenedioxyquinoline-2-carboxylic acid. and its picrate, A., II, 307.
- II, 6:7-Methylenedioxyquinoline-2-nitrile, A., 308.
- 5-(3':4'-Methylenedioxy)styryl-3-methylisooxazole, 4-nitro-, A., II, 238.
- acid. Methylene-ethylideneglucosaccharic dimethyl ester, A., II, 121.
- 9-Methylenefluorene, 9-amino-, 9-acetyl derivative, and 2:7-dibromo-9-a-amino-, A., II,
- Methyleneglucosaccharic acid, derivatives of, A., II, 121.
- and Methyleneglucosaccharolactone, ethyl methyl esters, A., II, 121.
- Methylene-d-glucosaccharolactone, structure of, A., II, 321.
- cis-3:6-endoMethylene-44-hexahydro-
- phthalamic acid, and its ammonium salt, A., II. 222.
- cis-3:6-endoMethylene-44-hexahydrophthalic acid, derivatives of, A., II, 222.
- Methylenecyclohexane oxide, pentahydroxy-, and its penta-acetate, A., II, 219.
- 2-Methylenecyclohexanone, A., II, 163. Methylenemannitol af-dibenzoate, A., II, 119. $\beta \epsilon$ -Methylene-D-mannitol, and its derivatives,
- A., II, 118. $\beta\delta$ -Methylene-D-epirhamnitol, and αγε-triacetate, A., II. 359.
- 88-Methylene-D-sorbitol, and its tetra-acetate, A., II, 286.
- cis-3:6-endoMethylene-44-tetrahydrophthalamic acid, and its ammonium salt, A., II, 222.

- cis-3:6-endoMethylene-A'-tetrahydrophthalic acid, derivatives of, A., II, 222.
- 3-Methylenetetrahydro-y-pyrone-2-carboxylic acid, 3-chloro-, and its 2:4-dinitrophenylhydrazone, A., II, 376.
- $\beta\delta$ -Methylene-D-xylitol, A., II, 286.
- $\beta\delta$ -Methylene-DL-xylitol, and its derivatives, A.,
- ay-Methylenexylotrihydroxyglutaric dimethyl ester, A., II, 321.
- 4-Methyl-5- $\beta\gamma$ -epoxy-n-propylthiazole, 2-amino-, and its picrate, A., II, 205.
- β-Methyl-d-erythronic acid, amide, amide, and y-lactone of, A., II, 213.
- d-Methylethylacetic acid, thiuronium salt, A., II, 268.
- 9-Methyl-10-ethylanthracene, and its picrate, A., II, 255.
- N-Methyl-N-ethyl-N-n-cetylhydrazinium bromide, A., II, 184.
- Methylethyldidodecylammonium iodide, A., II, 95.
- N-Methyl-N-ethyl-N-n-dodecylhydrazmium bromide, A., II, 184.
- γ -Methyl- β -ethyl- $\Delta^{\alpha\varepsilon}$ -heptadienonitrile, A., II, 47.
- ζ -Methyl- ϵ -ethylheptan- β -one, and its 2:4-dinitrophenylhydrazone and semicarbazone, A., II, 196.
- -)-ζ-Methyl-ε-ethylheptan-β-one, semi-
- carbazone of, A., II, 196. -)-γ-Methyl-δ-ethylhexane, A., II, 209, 281. (+)-y-Methyl- δ -ethylhexan- δ -ol, A., II, 209.
- β -Methyl- α -ethyl- Δ^{α} -n-hexenoamidine, and its picrate, A., II, 325.
- β -Methyl-a-ethyl- $\Delta\beta$ -n-hexenoic acid, methyl and β -propyl esters, A., II, 325.
- β-Methyl-α-ethyl-n-hexenonitrile, A., II, 325. γ-Methyl-γ-ethyl-n-hexoic acid, γ-hydroxy-,
- lactone, A., II, 185. B-Methyl-a-ethyl-n-hexonitrile, A., II, 325.
- 5-Methyl-6-ethylhydrindene, A., II, 329.
- Methyl ethyl ketone, condensation of, with benzaldehyde, A., I, 42. Methyl ethyl ketoxime, dissociation constant of,
- A., I, 224.
- γ-Methyl-γ-ethyl-n-octoic acid, γ-hydroxy-, lactone, A., II, 185.
- a-Methyl-β-ethyl-n-pentenonitrile, A., II, 325. 9-Methyl-10-ethylphenanthrene, A., II, 42.
- β -Methyl- β -ethyl- β' -isopropyladipic acid, A., II, 197.
- 6-Methyl-3-ethylquinoline ethiodide, A., II, 170. 7-Methyl-3-ethylquinoline ethiodide, A., II, 171.
- 2-Methyl-6-ethyltetrahydropyran, A., II, 198. a-Methyl-Δ^{9a}-fluorenemethylamine, and
- acetyl derivative, A., II, 261. 3-Methyl-d-fructose, A., II, 152. a-Methylgalactopyranoside, 2:6-di-p-toluene-
- sulphonate, A., II, 214.

 3-Methylgentisic acid, cyclohexyl and methyl esters, A., II, 139.
- a-Methylgeranylacetone, a-hydroxy-, and its allophanate, A., II, 150.
- a-Methylglucopyranoside 2:3:4-triacetate 6-nitrate, A., II, 185.
- β-Methylglucose tetranitrate, acetone absorption by, A., I, 283.
- Methylglucoside, anhydro-derivatives of, formation of, from nitrate acetates, A., II, 185.
- Methylglucosides, methylated, separation of, by adsorption on alumina, A., II, 361; C., 167. substituted, copper complexes of, optical activity of, A., II, 326.
- a-Methylglucoside 2:3:4-triacetate 6-nitrate. A., II, 185.
- 6-fluoride 2:3:4-trimethanesulphonate, A., II, 186.
- Methyl-a-D-glucoside, tetra-p-benzeneazobenzoate, A., II, 6.
- β-Methylglucoside 3:4:6-triacetate 2-nitrate, A., II, 185.
- a- and β-Methyl-d-glucosides, carbanilates of, A., II, 325, 326.
- a- and β-Methyl-d-glucoside 6-triphenylmethyl ethers, 2:3:4-tricarbanilates of, A., II, 326. 2-Methylglucosylphenylhydrazine, A., II, 251.
- 2-Methylglucosyl-p-toluidine, A., II, 251.

- Methyl groups, angular, introduction of, A., II,
 - carbon-linked, C., 165.
- functional aptitude of, A., II, 224. β-Methyl-Δβζ-n-heptadiene, A., II, 209. δ-Methyl-Δ^{ac}-heptadiene, A., II, 209.
- Methylcycloheptane, isomerisation of, A., II, 252. 1-Methylcycloheptanol, 1-amino-, and its hydrochloride, A., II, 194.
- ζ -Methyl- β - Δ^{ε} -n-heptenylglucoside, and tetra-acetate, A., II, 186.
- a-Methyl-a-n-heptylhexadeeoic acid, and its amide, A., II, 69.
- a-Methyl-a-heptylnonoic acid, and its amide, A., II, 69.
- Methyl-n-hexadecylamine, hydrochloride of, A., II, 35.
- Methylhexahydroperibenzanthrone, A., II, 190. Methylhexahydroisochrysofluorene, A., II, 190. 12-Methyl-1:2:3:4:12:13-hexahydroxanthen, A.,
- II, 22. ε-Methylhexane, γ-oximino-, A., II, 247.
- Methylcyclohexane, and its derivatives, physiological response of rabbits to, A., III, 762. thermal decomposition of, A., I, 106.
- 2-Methylcyclohexane, 1:2-dithiocyano-, A., II, 154.
- 4-Methylcyclohexane, 1:2-dithiocyano-, A., II, 154.
- 1-Methylcyclohexane-1-cyanoacetic acid, ethyl ester, A., II, 17.
- 1-Methylcyclohexane-1-malonamic acid, and its
- amide, A., II, 17. 3-Methylcyclohexanesulphonic acid, A., II, 335. barium salt, A., II, 154.
- 4-Methylcyclohexanesulphonic acid, ammonium salt, A., II, 154.

- β-Methylhexan-γ-ol, β-nitro-, A., II, 247. ε-Methylhexan-γ-ol, γ-nitro-, A., II, 247. cis- and trans-1-Methylcyclohexanols, 2-chloro-, A., II, 335.
- 3-Methylcyclohexanol, in Mentha pulegium, A., II, 31.
- trans-4-Methylcyclohexanol, a-naphthylurethane, A., II, 160.
- β -Methyl- $\Delta^{\alpha\gamma s}$ -hexatriene, δ -chloro-, and its dichloride, A., II, 118.
- ϵ -Methyl- $\Delta \gamma$ -hexene, γ -nitro-, A., II, 247.
- Methylcyclohexene, nitro-, A., II, 188. 4-Methyl-45-cyclohexene-1:3-dione-4:5-
- dicarboxylic acid, diethyl ester, A., II, 17. -Methyl- Δ^{δ} -n-hexen- Δ^{α} -men- γ -ol, A., II, 358.
- B-Methyl- Δ^{α} -hexen- ϵ -one, and its semicarbazone, A., II, 32.
- 3-Methyl-42-cyclohexenone, derivatives of, A., II, 367.
- 6-Methyl-\(\Delta^2\)-cyclohexenone, 2:4-dinitrophenylhydrazone, A., II, 368.
- β -Methyl- Δ^{α} -hexenomtrile, A., II, 250.
- Methyl β -cyclohexylaminoethyl ketone, ethylene ketal of, A., II, 34.
- 9-Methyl-10-n-hexylanthracene, and its semi-
- picrate, A., II, 255. Methyl β -N-cyclohexyl-N-ethylaminoethyl
- ketone, ethylene ketal of, A., II, 34. 2-Methylcyclohexylsulphamic acid, sodium salt,
- A., II, 158.
- 1-Methylhistidine, A., II, 348; III, 754. dl-1-Methylhistidine, metabolism of. See under
- Metabolism. synthesis of, A., II, 348.
- 17a-Methyl-D-homoætiocholane, its and derivatives, A., II, 141.
- 17a-Methyl-D-homoætiocholane, $3(\beta)$ -hydroxy-, A., II, 141.
- 17a-Methyl-D-homoætiocholane-3:17-dione, A., II, 141.
- 17a-Methyl-D-homoætiocholan-3-one, A., II, 141.
- 17a-Methyl-D-homoætiocholan-17-one,
- $3(\beta)$ -hydroxy-, and its $3(\beta)$ -acetyl derivative, A., II, 141.
- 3(β):17a(a)-dihydroxy-, and its acetyl derivatives, A., II, 141.
- $3(\beta):17a(\beta)-dihydroxy$, and its diacetyl derivative, A., II, 141.
- $17a(\beta)-3(\beta)-di$ hydroxy-, $3(\beta)$ -acetyl derivative, A., II, 141.

- 17a-Methyl-D-homo-A17-ætiocholene, $3(\beta)$ -hydroxy-, A., II, 141.
- N-Methylhomomeroquinme, ethyl ester, A., II,
- cis- and trans-8-Methyl-1-hydrindanones, and their derivatives, A., II, 48, 226.
- 4-Methyl-1-hydrindone, semicarbazone, A., II, 329
- 1-Methyl-2-a-hydroxyethylbenziminazole, A., II, 84.
- 4-Methyl-5-a-hydroxyethylthiazole, and its picrate, A., II, 86.
- 4-Methyl-5-β-hydroxyethylthiazole, A., II, 86. See also Fluorochrome.
- 4-Methyl-5- β -hydroxyethylthiazole, 2-chloro-, and its acetate, A., II, 86.
- 5-(4'-Methyl-5'-β-hydroxyethylthiazolium chloride) methylpyrimidine, 2:4-diamino-, hydrochloride, A., II, 146. analysis of, C., 71.
- 4-Methyl-2- β -hydroxy-n-propyl-1:3-dioxan, A., II. 183.
- 6-Methyl-2- β -hydroxy-n-propyl-1:3-dioxan, 4-hydroxy-, A., II, 183.
- 2-Methylhypoxanthine, A., II, 350.
- 4-Methyl-7-indanyloxyacetic acid, and 1-amino-, lactam, and 1-hydroxy-, A., II, 132.
- Methyl β -iodoethyl ketone, chloro-, A., II, 168. 3-Methyl-2-indolacyl bromide, A., II, 237.
- 3'-Methyl-2'-indolacylpyridinium bromide, A., II, 237.
- Methyl ketones, acylation of, with aliphatic esters, by means of sodium amide, A., II, 322.
- differentiation of, from methylcarbinols, C., 166.
- Methyl-lonchocarpic acid, A., II, 28.
- ←Methyl-dl-lysine, availability of, for growth, A., III, 490.
- Methyl-a-D-mannofuranoside, oxidation of, A., II, 214.
- 2-Methyl-2-methyl-5- and -7-allylbenzthiazoles, 6-hydroxy-, and their allyl ethers and piorates, A., II, 205.
- a-Methylene-β-methylbutyric acid, andp-phenylphenacyl ester, A., II, 182.
- δ-Methyl-ay-methyleneglucosaccharo-βεlactone, methyl ester, A., II, 321.
- Methyl-βδ-methylene-D-epirhamnitol, γ-hydroxy-, γ-acetyl derivative, αε-diacetate. A., II, 359.
- Methyl- $\beta\delta$ -methylenexylitol, γ -hydroxyy-acetyl derivative, acetates of, A., II, 286.
- γ -Methyl- $\beta\delta$ -methylene-DL-xylitol $\alpha\epsilon$ -diacetate, γ-hydroxy-, γ-acetate of, A., II, 285.
- β-Methyl-ay-methylenexylotrihydroxyglutaric acid, diamide and dimethyl ester of, A., II, 321.
- Methyl-3-methyl-4:6-ethylidene-a- and -β-glucosides, A., II, 292.
- 2-Methyl-a-methylgalactopyranoside, 6-p-toluenesulphonate, A., II, 214.
- 2-Methyl-3-4'-spiro-(1'-methylpiperidine)coumaran, and its picrate, A., II, 272.
- β-Methylmorphimethine, structure of, A., I, 195. 2-Methylnaphthalene, 1:3-dihydroxy-, and its
- diacetate, A., II, 130. 2-Methyl-1:4-naphthaquinone, bisulphite additive compounds of, A., II, 19. detection of, C., 168.
 - determination of. C., 184.
 - synthesis of, from benzene and citric or d-tartaric acid, A., II, 164.
 - See also Menadione and Vitamin-K.
- 2-Methyl-1:4-naphthaquinone-3-sulphonic acid, potassium salt, synthesis of, quinhydrone, A., II, 103. and
- 2-Methyl-1:4-naphthaquinone-8-sulphonic acid. synthesis of, and its acid amide, A., II, 19.
- 10-Methyl-47-naphthitene-1:3-dione, 4-hydroxy-, A., II, 139.
- 5-Methyl-47-naphthitene-1:2:4-trione, enol of, A., II, 138.
- δ -1-Methyl-2-naphthylimino-n-pentan- β -one, A., II. 235.
- 4-Methyl-1:8-naphthyridine, and its perchlorate and picrate, A., II, 237.

- 4-Methyl-1:8-naphthyridine, 2- (or 7-)-chloro-, A., II, 237.
- N-Methylnicotinamide, isolation of, from urine after nicotinamide ingestion, A., III, 130.
- N¹-Methylnicotinamide, determination of, C., 29. β -Methyl-n-nonan- ϵ -ol, and its 3:5-dinitrobenzoate, A., II, 248.
- y-Methylnonan-α-ol. α-naphthylurethane, A., II, 178.
- β -Methyl-n-nonan- ϵ -one, and its hydantoin derivative, A., II, 248.
- β -Methyl- Δ^{γ} -n-nonen- ϵ -one, and its hydantoin derivative, A., II, 248.
- γ -Methylnon- ζ -en- δ -yne- $\gamma\theta$ -diol, A., II, 178. y-Methylnon-α-en-δ-yn-y-ol, A., II, 178.
- y-Methylnon-β-en-δ-yn-a-ol, and its a-naphthylurethane, A., II, 178.
- β -Methyl-n-nonoic acid, a-cyano-, ethyl ester, A., II, 325.
- β-Methyl-y-n-nonolaetone, A., II, 163.
- Methyl-n-nonyl-n-dodecylcarbinol, A., II, 70.
- o-Methyl-n-octadecoic acid, and its amide, ethyl ester and tribromoanilide, A., II, 181. η -Methylocta- $\beta\eta$ -dien- ϵ -yn- δ -ol, and
- a-naphthylurethane, A., II, 178. η -Methylocta- $\gamma\eta$ -dien- ϵ - η n- β -ol,
- a-naphthylurethane, A., II, 178. 1-Methyloctahydrophenanthrene, A., II, 255.
- a-naphthylurethane, η -Methyloctan- β -ol, II. 178.
- β-Methyloctoic acid, α-cyano-, ethyl ester, A., II, 180.
- a-Methyloctylidenecyanoacetic acid, ethyl ester, A., II, 180.
- Methyl-orange, potassium salts, equilibrium of, with water, A., I, 17.
- 3-Methylisooxazole-5-carboxylic acid, 4-amino-, benzoyl derivative, and its methyl ester, A., II, 238. 4-chloro, A., II, 238.
- 3-Methyloxazolidine-2:4-dione, A., II, 382.
- 8-Methyl-7:12-cyclopenta[a]naphthitadiene-5:6:10:11-tetracarboxylic acid anhydride. 1-Methyl-5:6-trimethylene-2:3:4:6:7:8hexahydronaphthalene-3:4:7:8-tetracarboxylic anhydride.
- Methylcyclopentane, derivatives of, ring enlargement of, A., II, 194.
- 1-Methylcyclopentane-1-carboxylic-3-acetio acid, A., II, 101.
- y-Methylpentane-αδ-dicarboxylic acid.
- γδ-dicyano-, diethyl ester, A., II, 101. 1-Methylcyclopentane-1:4-dicarboxylic acid, 3-hydroxy-, diethyl ester, A., II, 339.
- 2-Methylcyclopentane-1:3-dione, and its dioxime, A., II, 138.
- 2-Methylcyclopentane-1:3-dione, 4-hydroxy-, and its derivatives, A., II, 138.
- y-Methylpentane-aγδ-triearboxylic acid, triethyl ester, A., II, 101.
- 3-Methylcyclopentane-1:2:4-trione, hydrogenation of, A., II, 138.
- β and δ -Methylpentan- γ -ols, β-nitro-, a-naphthylurethanes of, A., II, 247.
- 1-Methylcyclopentanol, p-nitro- and 3:5-dinitrobenzoates, A., II, 219.
- 2-Methylcyclopentanone cyanohydrin, A., II, 194.
- 3-Methylcyclopentanone cyanohydrin, A., II, 194.
- 4-Methylcyclopentanone-2:4-dicarboxylic-2acetic acid, triethyl ester, A., II, 101. δ -Methyl- $\Delta\beta$ -pentene, β -nitro-, A., II, 247.
- 1-Methyl-42-cyclopentene-1;3-dicarboxylic acid, A., II, 339.
- -Methyl- Δ^{δ} -penten- Δ^{α} -inen- γ -ol, A., II, 358. δ-2-Methylcyclopentyl-β-methyl-Δγ-n-butinenβ-ol, δ-1-hydroxy-, A., II, 101.
- 1-a-Methylphenaeylpyridinium perchlorate and iodide, A., II, 347.
- 1-Methylphenanthrene-2-carboxylic aeid. 4-hydroxy-, and its 4-acetyl derivative, ethyl ester, A., II, 338.
- 5-Methyl-1:10-phenanthroline, and its picrate, A., II, 276.

p-nitro-

3-Methylphenothiazine, A., II, 353. α -Methyl- β -phenylacraldehyde, phenylhydrazone, A., II, 10.

- 4'-Methyl-2-phenyl-4-(3'-methoxy-4'-acetoxy) benzylideneoxazole-5-one, 5'-bromo-, A., II, 59.
- 4-Methyl-3-β-phthalimidoethylthiazolium bromide, A., II, 313.
- ψ -2-Methyl-1- γ -phthalimidopropylquinolinium bromide, 6-amino-, 6-acetyl derivative, A., II,
- 1-Methylpiperazine dihydrochloride, A., II, 236. 4-Methylpiperidine hydrobromide, 4-hydroxy-,
- A., II, 169. 1-Methylpiperidine-4-sulphondiethylamide, II, 203.
- 2-4'-Methylpiperidinoethylfuran, hydrochloride, A., II, 173.
- 2-β-4-Methylpiperidinoethylfuran, 2-α-hydroxy-, and its acetate hydrochloride, A., II, 173.
- $2-\beta-4$ -Methylpiperidinoethyltetrahydrofuran, 2-a-hydroxy-, A., II, 173.
- 1-Methylpiperidino-4-spiro-9'-fluorene, A., II,
- 1-Methyl-2-piperidone, electronic resonance and resonance energy of, A., I, 143.
- 1-Methyl-4-piperidylphenylsulphone, A., II, 203. 20-Methylallopregnane, $17(a):20:3(\beta)-tri$
- hydroxy-, $3(\beta)$ -acetyl derivative, A., II, 51. 20-Methylallopregnan-3(β)-ol acetate, A., II,
- 20-Methyl- \varDelta^{20} -allopregnene- $3(\beta)$ -ol acetate, and its isomeride, A., II, 267.
- 4-Methylpropiophenone, 2:6-dihydroxy-, and its 6-methyl ether, A., II, 49.
- 8-γ-Methylpropylaminopropylamino-6methoxyquinoline, and its salts, A., II, 57.
- 9-Methyl-10-n-propylanthracene, and its picrate, A., II, 255.
- N-2-Methyl-5-isopropylbenzylethylenediamine, A., II, 366.
- β-Methyl-a-isopropyl-n-butyric acid, ethyl ester, A., II, 211.
- β -Methyl- $\Delta\beta$ -propylene, aaa-trichloro-, reaction of, with anisole, A., II, 89.
- α -Methyl- β -n-propyl-n-hexenoic acid, A., II,
- α -Methyl- β -n-propyl- $\Delta\beta$ -n-hexenoic acid, a-cyano-, ethyl ester, A., II, 325.
- β -Methyl- α -n-propyl-n-hexenoic acid, A., a-Methyl- β -n-propyl-n-hexenonitrile, A., II, 325.
- β -Methyl- α -n- and -iso-propyl-n-hexenonitriles, A., II, 325.
- 2-Methyl-3:4-isopropylidene- β -methyl-1fucoside, A., II, 153.
- 2-Methyl-3:4-isopropylidene-a-methylgalactopyranoside, p-toluenesulphonate, A., II, 214.
- 4-Methyl-7-isopropyl-1-indanone, A., II, 339. β -6-Methyl-3-isopropyl-1-indanyl-n-butyric acid, A., II, 125.
- a-6-Methyl-3-isopropyl-1-indanylidenepropionic acid, ethyl ester, A., II, 125.
- a-6-Methyl-3-isopropyl-1-indanylpropionic acid, a-1-hydroxy-, ethyl ester, A., II, 125.
- β -6-Methyl-3-isopropyl-1-indanylpropyl alcohol, A., II, 125.
- β -6-Methyl-3-isopropyl-1-indanylpropyl bromide, A., II, 125.
- 5:5-2'-Methyl-5-isopropylcyclopentamethylene-1:3-N-dimethylhydantoin, A., II, 348.
- 5:5-2'-Methyl-5-isopropylcyclopentamethylene-3-N-methylhydantoin, A., II, 348.
- β-2-Methyl-5-isopropylphenylpropionic acid, A., II, 339.
- α -Methyl- β -n-propylstilbene, 4:4'-dihydroxy-, and its derivatives, A., II, 129. β-Methylpyranoside 3:4:6-triacetate 2-nitrate,
- A., II, 185. 3-Methylpyrazole, 4-nitre derivatives, A., II, 238. 4-nitro-5-amino-, and its
- and 4-Methylpyridines, derivatives condensation of, with cinnamaldehyde, A., II, 233.
- 2-Methylpyridine, 5-bromo-, A., II, 143.
- 2-Methylpyridine-3-carboxylic acid, ethyl ester, picrate, A., II, 201.
- 2-Methylpyridine-3-carboxylic acid, 4-chloro-, ethyl ester, A., II, 201. 4-hydroxy-, ethyl ester, A., II, 201.
- 2-Methylpyridine-3:5-dicarboxylic acid, 4-hydroxy-, and its derivatives, A., II, 201.

- 4-Methylpyridine-3-nitrile, A., II, 144.
- 4-Methylpyridme-3-sulphonic acid, A., II, 144.
- N'-2-(6-Methylpyridyl)- N^2 -octadecylsulphanilamide, and its N'-acetyl derivative, A., II,
- 2-Methylpyrimidine, 4:6-diamino-, 4:6-diacetyl derivative of, A., II, 381.
- 5-Methylpyrimidine, 2:4:w-5-triamino-, dihydrochloride, A., II, 146.
 - 2:4-d:amino-ω-5-hydroxy-, hydrochloride of, A., II, 147.
- 2-Methylpyrimidine-5-carboxylic acid, 4-amino-, and its derivatives, A., II, 204.
- See 3-Methoxy-3-Methylpyrogallolaidehyde. benzaldehyde, 2:4-dihydroxy-.
- dl- and l-3-Methylpyrrolidine-2-carboxylic acids, ethyl esters, picrates, A., II, 241.
- 7-(N-Methylpyrrolidyl)-3-phenylpyriminazole, and its picrate, A., II, 111.
 7-(N-Methylpyrrolidyl)-3-phenylpyriminazole-2-
- carboxylic acid, picrate of, A., II, 111.
- dl-1-Methylpyrrolizidine, and its derivatives, A., II, 241, 280.
- 2-Methylquinoline, 3:4-diamino-, and its derivatives, A., II, 201.
- 4-chloro-3-amino-, hydrochloride, A., II, 201. 3-Methylquinoline, ethiodide, A., II, 170.
- 3-Methylquinoline, 7-chloro-, ethiodide, A., II,
- 6-nitro-, A., II, 170.
- 4-Methylquinoline, 2-hydroxy-, 2-benzoate, A., II, 378.
- 5-Methylquinoline, 5-trifluoro-, A., II, 171.
- 7-Methylquinoline, 7-trifluoro-, A., II. 171 8-Methylisoquinoline, 7-hydroxy-, A., II, 314.
- Methylreteneoxazole, 2-hydroxy-, and its acetate, A., II, 86.
- Methylrubazoic acid, synthesis of, A., II, 25. a-Methyl-L-sorbopyranoside, oxidation of, with lead tetra-acetate in glacial acetic acid, A., II, 7.
- a-Methylstilbene, 4:4'-dihydroxy-, A., II, 128. 3-Methylsulphanilamido-2:3-dihydrothiazoline,
- β -Methyl-a-sulphomethyl-n-butyric acid, and its derivatives, A., II, 182.
- Methyltestosterone, linguets, treatment with, of eunuchoids, A., III, 254.
- treatment with, adrenal changes after, A., III, 341.
- ε-Methyl-n-tetracosoic acid, amide, ethyl ester and tribromoanilide of, A., II, 182.
- ε-MethyI-n-tetracosoic acid, ε-hydroxy-, A., II,
- t-Methyl-n-tetracosoic acid, and its ethyl ester and tribromoanilide, A., II, 182.
- Methyl-1:2:3:4-tetrahydroacridones, and their
- picrates, A., II, 379. 2-Methyl-1:2:3:4-tetrahydroisoarsinoline, and
- its derivatives, A., II, 65. 1-Methyl-3:4:5:6-tetrahydrocoumarone-2carboxylic acid, and its ethyl ester,
- di(ethylene ketal) of, A., II, 34. 9-Methyl-3:4:7:8-tetrahydromdolizinium iodide,
- 3':4':3'':4''-tetramethyI ether, A., II, 203. a-Methyltetrahydroionol, A., II, 103.
- 5-Methyl-1:2:3:4-tetrahydronaphthalene, 6-hydroxy-, A., II, 18.
- 5-Methyl-1:2:3:4-tetrahydronaphthalone-3carboxylic acid, and its ethyl ester, A., II, 329.
- 1-Methyl-5:6:7:8-tetrahydro-2-naphthol, A., II,
- 4-Methyl-5:6:7:8-tetrahydro-2-naphthol, and its benzoate, A., II, 195.
- 5-Methyltetrahydronaphthyldimethylcarbinol, A., II, 329.
- 4-Methyl-1:2:3:4-tetrahydro-1:8-naphthyridine, and its benzoyl derivative, A., II, 237. 4-Methyl-5:6:7:8-tetrahydro-1:8-naphthyridine,
- benzoyl derivative, and nitro-, A., II, 237. 8-Methyl-1:2:3:4-tetrahydrophenanthrene,
- 9-chloro-, A., II, 42. 2-Methyltetrahydropyran, A., II, 198.
- 2-Methyltetrahydropyran-6-carboxylic hydrazide, and methyl ester of, A., II, 198.
- Methyl-1':2':5':6'-tetrahydropyrido-4':3'-4:5glyoxaline-6'-carboxylic acid, hydroxy-, A., II, 379.

- 3-Methyltetrahydro-y-pyrone-2-carboxylic acid, and its derivatives, A., II, 376.
- -Methyl-1:2:3:4-tetrahydroisoquinoline,
- 7-hydroxy-, A., II, 314. 4'-Methyl-3:4:5:6-tetrahydrothiazolo-2':3'-2:3pyrimidine hydrobromide, A., II, 174.
- 2-Methylthiazole-5-carboxylic acid, and its ethyl ester, A., II, 113.
- 4-Methylthiazolo(2,3-b)tetrahydropyrimidine hydrobromide, A., II, 174.
- β -(4-Methylthiazolyl-5)-alanine, effect of, on tomato roots, A., III, 87.
- β-Methyl-a-thiolmethyl-n-butyric acid, and its a-acetyl derivative, A., II, 182.
- 2-Methylthiophan-3-one, and its semicarbazone, A., II, 168.
- 4-Methylthiophan-3-one, semicarbazone, A., II, 168.
- 2-Methylthiopyrimidine, 4:6-diamino-, derivative, hydrochloride of, A., II, 59.
- S-Methylisothiourea, toxicopathology of, A., III, 684.
- 1-Methyl-5:6-trimethylene-2:3:4:6:7:8hexahydronaphthalene-3:4:7:8-tetracarboxylic anhydride, A., II, 101.
- 4-Methylumbelliferone-8-carboxylic acid, A., II, 200.
- β -Methyl-n-undecan- ϵ -ol, A., II, 248.
- β-Methyl-n-undecan-ε-one, and its hydantoin and nitroguanylhydrazone, A., II, 248.
- β -Methyl- $\Delta \tilde{\gamma}$ -n-undecen- ϵ -one, and its hydantoin derivative, A., II, 248.
- B-Methyl-n-valeric acid, a-bromo-, derivatives of, A., II, 31.
- d-, l-, and dl- β -Methyl-n-valeric acids, δ -n-nitroamino-, δ-benzoyl derivatives, A., II, 241.
- B-Methyl-n-valeryl bromide, a-bromo-, A., II, 31. 8-Methylvinylacetylene, condensation of, with crotonaldehyde, A., II, 177.
- Methyl vinyl ketone, determination of, in mixtures with diacetyl, methyl ethyl ketone, and methyl vinyl carbinol, C., 166. dimeric, A., II, 198.
- a-4-Methyl-4-vinyl-3-1sopropenylcyclohexylpropionic acid, a-2:6-dihydroxy-, 2-lactone, A., II, 197.
- β-4-Methyl-4-vinyl-3-isopropenylcyclohexyl-n-
- propyl alcohol, β -2:6-dihydroxy-, A., II, 197. Methylvomicidine I, A., II, 240. Methylvomicine, derivatives of, A., II, 239.
- Methylvomicine II, and its methiodide, A., II,
- Methylxanthines, colour reaction of, C., 71. Metrorrhagia, ætiology of, nutritional deficiency in, A., III, 467.
- Mexicain, activity of, A., III, 217. Meyer, Ernst von, A., I, 207.
- Mica, growth of quinol on, A., I, 194.
- magnesian-ferriferous, colour of, A., I, 71. Mice, Brachy, embryos of, development of, in
- extra-embryonic coelom of chicks, A., III,
- dissection of, aseptic, C., 193.
- fertility and lactation in, effect of thiamin on, A., III, 547.
- growth of, amino-acids required for, A., III,
- infection of, by herpes virus, A., III, 225. laboratory, host-parasite relations of, with Nematospiroides dubius, A., III, 306.
- Micelles, formation of, theory of, A., I, 281. Michler's ketone, condensations with, A., II,
- Microcolon, congenital, A., III, 256.
- aeruginosa, decomposition of, Microcystis nitrogen and phosphorus compounds formed during, A., III, 853.
- Microglia, cytogenesis of, and its relation to reticulo-endothelial system cells, A., III, 389.
- Micrometry, pneumatic testing in, C., 95.
 Micromolecular compounds. See under Compounds.
- Micromolecular systems. See under Systems. Micro-organisms, acidurie, A., III, 561.
 - anaerobic, growth of, A., III, 144. intestinal, infection with, as cause of pulmonary hæmorrhage, A., III, 396. biochemistry of, A., III, 290.

- Micro-organisms, diamino-oxidase and histidinedecarboxylase, in, A., III, 499.
 - glucose utilisation by, and its inhibition, A., III, 294.
 - growth of, effect of mesoinositol on, A., III,
 - 615.
 - effect of zeolite on, A., III, 68.
 - growth and respiration of, action on, of sodium azide, A., III, 694.
 - in air, bactericidal action of propylene glycol
 - vapour on, A., III, 133. in upper air, A., III, 145.
 - pyrogens from, A., III, 773 species adjustment in, A., III, 435.
 - unicellular, flagellate, swimming of, A., III,
- Micropenetrometers. See under Penetrometers. Microphotometers. See under Photometers.
- Microphthalmia, unilateral, sporadic, associated malformations in chick embryos,
 - A., III, 627.
- Microradiography, C., 198. by reflexion, C., 198.
- Microscopes, binocular, use of, in minerography, C., 100.
 - electron, C., 50, 152.
 - bordered images of particles in, C., 205. electron-microkinematography with,
 - electrostatic, C., 50.
 - for study of sperm, A., III, 345.
 - particle photography with, C., 50.
 - photographs with, of medico-biological objects, C., 193.
 - photolayers for use in, A. I, 195.
 - resolution of, for emitting sources, A., I, 187.
 - theory of, for objects emitting electrons, A.,
 - transmission-type, apertures of, A., I, 187. with provision for shielding the object, C., 102.
 - yoke-lens, C., 152.
 - electron field, resolving power of, A., I, 187. ultra, electron, with electron probe, C., 102. electrostatic emission, C., 205.
- Microscopy, electron, applied, C., 102.
 - bibliography of, C., 102. electrostatic, C., 102.
 - of bacteria, A., III, 75.
 - fluorescence, binocular, C., 100.
- staining tubercle bacilli in, A., III, 630.
- of crude drugs, C., 184. oil immersion, device for, C., 46.
- paraffin tissue preparations in, utilising Kahn shaker, A., III, 573.
- sections for, preparation of, by cellophane strip method, A., III, 789. removal of formaldehyde-produced pre-
- cipitate from, A., III, 630. slide cell for, C., 194.
- ultra-, oxidation of metal powders in, C., 103.
- ultra-violet, C., 100.
 Microsporium audouinii, growth of, stimulated
- by Bacillus weidmaniensis, A., III, 291. Microtome, accuracy of, by measurement of paraffin section thickness, A., III. 390.
- Micturition, volume of, in pregnant rats, A., III,
- See also Diuresis, Polyuria, Urine, etc.
- Midwifery, blood pressure in, A., III, 576. trichloroethylene anæsthesia and, A., III, 429. Migraine, gonadotropin excretion in, in man, A., III, 33.
- eadache, pharmacodynamics of urine excreted during, and its relation to headache,
- 17-ketosteroid content, A., III, 258. Menière's disease and, A., III, 26.
- Mildew, powdery. See Erisiphe graminis tritici. Milk, action of, against cholic acid formation and gizzard erosion in chicks, A., III, 48. and its fat secretion, effect of oxytocin on, A.,
- III, 408. bacteriology and chemistry of, C., 130.
- calcium of, availability of, A., III, 42. casein in, composition of, A., III, 818.
- cereal-thickened, formula for, for breast milk deficiency, A., III, 123.

Milk, cow's, ascorbic acid, riboflavin, and thiamin content of, A., III, 824. riboflavin and thiamin in, stability of, effect of incubation on, A., III, 423. curdling qualities of, testing of, C., 130. determination in, of calcium and magnesium, 3., 30. of carbon dioxide, C., 31. of carotene and vitamin-A, C., 182. of citric acid, C., 80. of pH, C., 50. of solids, C., 130. of tocopherol, C., 85. of white blood-corpuscles, A., III, 148. evaporated, lactic acid, in relation refrigerator, A., III, 123. without sugar, for infant feeding, A., III, 483. feeding with, anæmia due to, in Shoshone Indian infants, A., III, 418. goat's, staphylococcal intoxication from, A., III, 149. hippuric acid in, A., III, 112. human, combined sugar in, A., III, 813. excretion of sulphanilamides in, A., III, 53. production of, effect of cystine on, A., III, 472. lactic acid in, infant nutrition with, A., III, 264.late-lactation and mastitis, methylene-blue and resazurin tests in, C., 180. mastitis and souring of, C., 180. mouse, complexes from, ultracentrifugal studies on, A., III, 121. æstrogen excretion in, from æstrogenised cattle, A., III, 740. pasteurisation of, in relation to infant mortality in Toronto, Vancouver, and Victoria, A., III, 71. pasteurised, detection of, phosphatase test for, C., 130. pasteurised and raw, ascorbic acid, riboflavin, and thiamin in, A., III, 125. peroxidase from, A., III, 689. production of, effect of fasting and refeeding on, A., III, 826. increase of, after thyroprotein feeding, A., III, 411. use of home-grown foods for, A., III, 418. proteins of, blood precursors of, A., III, 813. raw, detection in, of thermodurio organisms, C., 179. rennet curd of, firmness of, C., 131. resazurin test for, C., 179, 180. riboflavin in, destruction of, by sunlight, A., III, 673. produced under standardised conditions, A., III, 423. sour, analysis of, C., 130. substitutes for, strained meats as protein basis for, in treatment of milk allergy in infants, A., III, 749. vitamin-A content of, in sheep, A., III, 824. vitamin-B content of, from animals of different species, A., III, 268. vitamin- B_2 in, photochemical destruction of, A., III, 752. Milk fat, human, A., III, 477. component fatty acids of, A., III, 740. production increase of, after thyroprotein feeding, A., III, 411. Milk powder, dried, particles of, determination of gas volume in, C., 80. Milk products, determination in, of pH, C., 50. dried, determination in, of riboflavin, C., 34. Mills, cutting, for hard elastic tissues, C., 56. MillivoItmeters, vacuum-tube, portable, C., 203. Mine water. See under Water. Miners, native, sulphonamide therapy in, A., III, 680. Minerals, analysis of, microchemically, C., 14, soluble in phosphoric acid, C., 16. spectrochemically, C., 5. autoradiography of, A., I, 92. British, unusual, A., I, 207. clay, electrochemistry of, A., I, 60. colloid dispersion, composition of, A., I, 184.

Minerals, concentration of, apparatus for, C., 54. deficiency of, symptoms of, in rat and mouse, A., III, 42. density of, compared with sand, A., I, 208. detection in, of uranium, A., I, 72. determination in, of beryllium, photometrically, C., 106. helium content of, A., I, 232. helium index of, A., I, 46. Kazakhstan, A., I, 134. metamorphic, isotopic water in, A., I, 46. Mt. Isa, zoning of, A., I, 91. new, in quartz basalt, California, A., I, 135. Newey igneous complex, A., 1, 135. Paris basin, A., I, 134. Portencorkie complex, Wigtownshire, A., I, 135. radioactive. See under Radioactive. rock-forming, crystallisation and melting of, A., I, 257. sedimentation and stratification of elastic deposits of, A., I, 70. self-diffusion in, A., I, 135. silicate, gelatinising with acid, structure of, A., I, 136. Spanish, ages of, A., I, 112. thermal dehydration curves of, A., I, 232. thorium-uranium ratio in, A., I, 258. Urutukan deposit, A., I, 71. Mineralisation, degree of uniformity of, A., I, Minerography, use of binocular microscopes in, C., 100. Mink, brain of. See under Brain. Miosis, senile, causes of, A., III, 103. Mirrors, ferromagnetic, Kerr effect in, effect of thin dielectric films on, A., I, 53. Mistletoe, American, chlorophyll and photo-synthesis in, A., III, 444. Mites, infesting stored food. See Tyroglyphus farina. scabies-producing. See No Sarcoptes scabiei var. hominis. Mitigal. See Dimethylthianthren. Notogdres c-Mitotic activity, relation of, to water solubility, A., III, 382. Mixtures, binary, molecular state of, A., I, 220. statistical mechanics of, A., I, 8. organic, determination of composition of, by refractivity, C., 196. Moisture. See Water. Moisture meter, for use with barley samples, C., 128. Molasses, cane, determination in, of soluble ash. C., 31. Moles, tooth replacement in, A., III, 785. Molecular constants, kinetic theory and, A., I, rearrangements, racemisation with, A., II, 118. structure, A., I, 237. determination of, by electron diffraction, A., systems, momentum distribution in, A., I, 30. volume. See under Volume.

Molecular weight, additive function of, and critical temperature, A., I, 149. determination of, of organic compounds by dialysis, A., I, 150. distinction between gram-molecule and, A., I, 121. infra-red scattering in relation to, A., I, 165. of high-molecular substances from infra-red ray scattering, A., I, 248; C., 196. Molecules, diatomic, dissociation energy and spectra of, A., I, 115. polyatomic, dissociation of, and valency-force model, A., I, 29. fluorescence of, A., I, 266. frequencies of, A., I, 117. biologically active, physico-chemical properties of, A., III, 195. compressibility of, and van der Waals' equation, A., I, 274. conception of, A., I, 31. double, arrangements of, on adsorption sites. calculated by Bethe method, A., I, 237.

Molecules, fibre-typo, unrolling of, in flowing liquids, A., I, 36. interaction of, investigation of, by means of spectra, C., 97. long-chain, degradation of, A., I, 227. elasticity of network of, A., I, 15. macro-, flexibility of, studied with ultrasonic waves, A., I. 152. mol. wt. and shape of, in solution, A., I, 202. models of, construction of, (P.), C., 104. multiple and single, free energies of, in solutions, A., I, 250.

orientation of, at boundary surfaces and in associated molecules, A., I, 193. thread, models of, form and mobility in, A., I, unsaturated, reaction of, with sodium platinichloride, A., II, 69. Mollienisia latipinna, gonopodia induction in females of, A., III, 387.
Molybdates. See under Molybdenum. Molybdenum, isotopes, A., I, 75. Molybdonum alloys, with iron and nickel, passivity in, A., I, 198. with nickel, A., I, 57. crystal structure of, A., I, 217. Molybdenum compounds, in animals, A., III, 541. in Leguminosæ, A., III, 855. in plant nutrition, A., III, 379. Molybdates, spectra of, Raman, A., I, 266. structure of, A., I, 216, 292. Metamolybdic acid, spectrum of, Raman, depolarisation in, A., I, 117. Molybdenum detection and determination :detection in, of tungsten, C., 111. detection of, C., 57. determination of, co hæmatoxylin, C., 8. colorimetrically, in high-speed steel, C., 65. in ores, spectroscopically, C., 110. in plants and soils, C., 139. in steel, photometrically, C., 160. with steeloscope, C., 12. vanadometrically, C., 12. Monazite, North Carolina, A., I, 208. Monchikite, Takob, A., I, 112. Moniliasis, oral, in newborn infants, A., III, 841: Monkeys, African moustache. See Cercopithecus cephus. cynomolgus, poliomyelitis in, A., III, 374, grivet and vervet, susceptibility of, to trachoma, A., III, 649. South American ringtail. See Cebus capucina.
Monochromatism, A., III, 804. Monochromators, double, infra-red, electrodynamic slit unit for, C., 99. large-aperture, C., 199. X-ray, C., 199. Monocrotalamide, II, 147. Monocrotalic acid, and its chloride, chlorineketone, and diazo-ketone, II, 147. Monocrotaline, structure of, II, 147, 241. Monodisperse substances, preparation of, A., I, 172.Mononucleosis, infectious, A., III, 8, 575, 716. See also Glandular fever. Monosaccharides, determination and occurrence of, in tobacco, C., 87. Montmorillonite, analysis of, X-ray, hydration control in, C., 164. thixotropy of, A., I, 200. Montmorillonite earths, colour reactions and structure of, A., I, 259. Moraxella lwoffl var. brevis, effect of X-rays on, A., III, 844. Morgagni-Stewart-Morel syndrome, A., III, 476. Morphine, abstinence syndrome of, relation of intensity of, to dosage, A., III, 834. addicts to, blood flow in, A., III, 683. analgesic effect of, alone and with d-amphetamine, A., III, 683.

and central stimulants, combined action of,

antagonistic effect on, of N-allyImorphine, A.,

A., III, 834.

III, 135.

Morphine, effect of, compared with cobra venom on unanæsthetised cat, A., III, 135. in hæmorrhagic shock, A., III, 395. on asthma, danger in, A., III, 135.

on central nervous system of cats, A., III,

on learned adaptive responses and neuroses in cats, A., III, 646.

post-addicts to, pain threshold in, effect of opiates on, A., III, 59.

sulphate, analgesic effect of, A., III, 760. sulphuric ether, fate of, A., III, 555.

toxicity of, for hamsters, A., III, 429. treatment with, of pulmonary embolism, by

intravenous drip, A., III, 799. urinary excretion of, in opium addicts with and without lecithin-glucose treatment, A., III, 834.

Morpholinoacetone, oxime of, A., II, 171. ω-Morpholinoacetophenoxime, A., II, 352.

2-Morpholinoacetylfuran, hydrochloride of, A., 11, 173.

3-Morpholinoacetylpyridine, and its derivatives, A., II, 382.

4-Morpholinoalkyl esters, antispasmodic

activity of, A., III, 760.

N-Morpholino-N'-sec. and -te carbamides, A., II, 238.

N-Morpholino-N'-\(\beta\)-benzoyloxymethyl--tert .- amyl-

carbamide, A., II, 238.

10-Morpholinobenz(g)quinoline, 7-nitro-, A., II, 275.

N-Morpholino-N'-n-, -iso-, -sec.-, and -tert.bntylcarbamides, A., II, 238.

N-Morpholinobutylenediamine, and its picrate, A., II, 291.

y-Morpholino-n-butyronitrile, and its picrate, A., II, 291.

 $\beta\beta'$ -Morpholinoethylaminopropionitrile, and its

picrate, A., II, 291. 2-β-Morpholinoethylfuran, 2-α-hydroxy-, and its derivatives, A., II, 173.

10- β -Morpholinoethylphenothiazine, 353.

 γ - β' -Morpholinoethyl-n-propylamino-npropylamine, and its picrate, A., II, 291.

2-β-Morpholinoethyltetrahydrofuran, 2-α-hydroxy-, and its hydrochloride, A., II, 173.

N-Morpholino-N'-cyclohexylcarbamide, A., II, 238.

N-Morpholino-N-B-hydroxyethylcarbamide, A.,

4-Morpholino-3'-methoxy-5:6-benzoquinoline, A., II, 347.

a-Morpholino-p-6-methoxy-1:2:3:4tetrahydroquinolino- β -phenylethyl methyl ketone, A., II, 279.

 α -Morpholino- β -6-methoxy-1:2:3:4-

tetrahydroquinolinopropiophenone, A., II, 279. N-Morpholinomethyl-N'-allylcarbamide, A., II, 238,

Morpholinomethylcarbamide, and its picrate, A.,

N-Morpholinomethyl-N'-ethylcarbamide, A., II, 238.

N-Morpholinomethyl-N'-methylcarbamide, A., II, 238.

N-Morpholinomethyl-N'-n- and -iso-propylcarbamides, A., II, 238.

Morpholinomethylthiocarbamide, A., II, 239.

 β -Morpholino- α -phenylethylamine, and benzoyl derivative, A., II, 352.

 β -Morpholino-a-3-piperidylethyl alcohol, dihydrochloride, A., II, 382.

y-Morpholino-n-propylaminobenzfurano-2':1'-6:7-quinoline, A., II, 173.

8-y-Morpholino-n-propylaminobenzfurano-1':2'-5:6-quinoline, A., 11, 173.

 β - γ' -Morpholino-n-propylaminopropionitrile, and its picrate, A., II, 291.

 $\gamma - \gamma' - Morpholino - n - propylamino - n - propylamine,$ and its picrate, A., II, 291.

N'-y-Morpholino-n-propylsnlphanilamide, and its acetyl derivative, A., II, 292.

 β -Morpholino-a-3-pyridylethyl alcohol, derivatives of, A., II, 382.

4-Morpholinopyrimidine, 2-amino-, A., II, 349.

a-Morpholino-b-tetrahydroquinolino-8phenylethyl methyl ketone, A., II, 171. β -Morpholino-a-tetrahydroisoquinolino- β phenylpropiophenone, A., II, 171.

Mortality, infant, in relation to milk pasteurisation in Toronto, Vancouver, and Victoria, A.,

Mortar, measurement of bond between, and bricks, C., 114.

Mosquitoes, larvæ, nutrition of, A., III, 267. transmission by, of encephalitis, A., III. 150. See also Culex and Culiseta.

Moss, Irish, extracts, as substitute for agar in culture media, A., III, 294.

Spanish, rhinitis due to, A., III, 852. Moths, codling. See Carpocapsa pomonella. Motor fitness, tests for, A., III, 836.

Moulds, acid formation by, A., III, 68. antibacterials formed by, A., III, 368. anti-fungal substances from, A., III, 219. counting of, recording device for, A., III, 368. relation of, to asthma and vasomotor rhinitis, A., III, 559.

vitamin deficiency of, A., III, 143. Mucilage, plant, fermentation of, C., 90.

in, gastric, polysaccharide-amino-acid complex from, A., III, 226. Mucin.

structure-viscosity of, A., I, 62. apparatus for measurement of, C., 52.

Mucoceles, appendical, myxoglobulosis and, A., III, 113.

Mucyldimethane, tetraacetate, A., II, 214. Mud, calcareo-dolomitic, Balkhash lake, A., I, 91. medicinal, determination in, of sulphates, C., 2,

of sulphur, A., I, 69. suspensions, effect of sand on thixotropic gelation and viscosity of, A., I, 125.

vesiculated, south-western Ohio, A., I, 134. Multipliers, electron, as electron counters, C., 103.

Mumps, blood-diastase in, A., III, 97, 718. immunity in, A., III, 79.

Mumps pancreatitis, blood-diastase valve in, A., III, 718.

Mus musculus, fertility and spermatogenesis in, as affected by factors at the T locus, A., III,

Musca domestica, chemoreceptors of, effect of poisons in sucrose solutions on, A., III, 685. Muscle, activity of, choline-esterase and, A., III,

176. effect of heat produced by short-wave

diathermy on, A., III, 724. adenosine triphosphate in, in rats studied with radio phosphorus, A., III, 458.

atrophy and regeneration of, effect of atropine on, A., III, 176.

binocular, balance of, and its importance in air erew selection, A., III, 181.

evaluation of, A., III, 181. cardiac, adrenaline and derivatives in, pathogenic significance of, A., III, 13.

damage to, due to high oxygen tension, A., III, 329.

effect on, of hook-worm infection, A., III, 639.

electric variation in, electrode for registration of, C., 127. infarction of, associated with bundle branch

block, A., III, lo. unipolar

diagnosis of, augmented u extremity leads in, A., III, 637.

diagnosis and location of, by electrocardiogram, A., III, 637.

Dupuytren's contracture as sequel to, A., ÎÎI, 241.

ischæmia of, induced as circulatory test for pilots, A., III, 638.

resting, phosphate exchange in, A., III, 203. tonus changes in, in relation to impulses, A., III, 636.

cardiac and somatic, embryonic effect of barium and potassium chlorides on cultures of, A., III, 4.

cation content of, effect of deoxycorticosterone acetate and low-potassium diet on, A., III, Muscle, contraction of, automatic, chick, in vitro, A., III, 399.

in relation to muscle-protein solubility, A., III, 100.

denervated, delayed contraction of, with intravenous barbiturates, A., III, 458. esiccated, reconstituted, intraperitoneal

desiccated. implantation of, shock due to, A., III, 641. development of, in nerveless and innervated

chick embryo grafts, A., III, 3. dystrophy of, creatinuria in, effect of methyltestosterone and testosterone propionate

on, A., III, 458. progressive, histopathology of, shown by

ultra-violet photomicrography, A., III,

elastic after-effects in, A., III, 528.

fatigue of, apparent, and Scheminzky effect, A., III, 18.

contractions and incidence of, effect of ascorbic acid on, A., III, 330.

fibres of, mechanics and morphology of, A., III, 527.

properties of, subjected to vitrification by rapid cooling, A., III, 330.

fibrils of, electron microscopy of, in clams, A., III, 528.

fish, bacterial populations in, A., III, 145. gastrocnemius, creatine content of, in rats on choline-containing diet, A., III, 723.

stretch of, reflex response to, conduction and synaptic transmission of, in spinal cats, A., III, 401.

gastrocnemius-plantaris, segmental motor innervation of, in dogs, A., III, 401. genital, smooth, effect of drugs on, in guinea-

pig, A., III, 580.

glycogen in, effect on, of adrenalectomy, castration, deoxycorticosterone acetate, and testosterone, A., III, 459.

histamine in, content and formation of, in fish, A., III, 579. in biotin-deficient rats, A., III, 17.

inguinal, conjoined aponeurosis and tendon in, A., III, 709.

ischæmia of, potassium concentration rise in blood stream after, A., III, 12.

lipins of, in rats deprived of tocopherol, A., III. 49.

mechanochemistry of, A., III, 245.

motor end plates in, structure of, effects of inanition on, A., III, 723.

motor unit complex in, polyphasic action currents of, A., III, 642.

mussel, glycogen of, A., II, 39.

phosphate changes in, effect of insulin on, A., III, 407. phosphate metabolism of, action of sodium

iodide and sodium thiocyanate on, A., III,

phosphorylase from, crystalline, A., III, 217.

proteins, hydrolysis of, effect of protease on, A., III, 67, 690.

rectus, response of, to acetylcholine, effect of pituitary on, in frogs, A., III, 653. superior, paresis of, A., III, 802.

re-innervation of, after atrophy, A., III,

response of, to acetylcholine, effect of insulin on, in frogs, A., III, 724.

skeletal, attachment of fibres of, A., III, 629.

extracts of, aqueous, protein of, A., III,

proprioceptors of, activity of, effect of motor denervation on, in frogs, A., III, 246.

effect of sympathetic nervous system on, in frogs, A., III, 20.

effect of anterior and posterior root stimulation on, in frogs, A., III, 20.

function of, action of drugs on, in frogs, A., III, 580. regenerating, oxvgen consumption of, A.,

III, 330. sympathetic vasoconstrictor tone in, in

man, A., III, 16.

Muscle, smooth, accommodation and excitation in, A., III, 580.

contraction of, produced by tension change, A., III, 580.

contraction and visco-clastic properties of, A., III, 399.

effect on, of ether-extractable substance from blood serum and buffy coat, A., III. 579.

electrical resistance of, and its relation to permeability and excitability, A., III, 399.

inhibition in, by electrical stimulation, drugs, and ions, A., III, 580.

interior and surface effects in, produced by ions, A., III, 723.

reversal effects in, A., III, 580. smooth and striated, birefringence of, in mammals, A., III, 723.

sphineter of Oddi, A., III, 625.

division of, effect of, on bile-diastase in dogs, A., III, 36.

hypertrophy of, A., III, 625.

sphincter pupillae, nerve terminations in, choline-esterase at, in turtles, A., III, 180. striated, action currents of, effect of encircling conducting band on, A., III, 245.

chronaxie of, action on, of p-aminobenzoyldiethylaminoethanol and derivatives, A., III, 579.

contraction of, effect of hormones on, A., III, 100.

striated and ventricular, electrical stimulation of, influence of interelectrodal distance on, A., III, 246.

striations of, comparative morphology of, and of periodic precipitation in capillary tubes, A., III, 100.

tensor tympani. See under Ears.

tibialis anterior, segmental motor innervation of, in dogs, A., III, 401.

tissues, form-producing capacity of, after implantation, A., III, 447.

preparation of, for histological study, A., III, 390.

work capacity of, effect of ergotamine tartrate and neosynephrin hydrochloride on, in man, A., III, 176.

Muscle extracts, oyster, glycolysis in, A., III,

Muscle-nerve preparations. See Nerve-muscle preparations.

Muscovite, action of hydrofluoric acid on, A., I, 184.

refractive index of, C., 150.

Muscular exercise, acceleration of, by nicotinamide, A., III, 270.

carbohydrate metabolism in, blood-ketone bodies in relation to, A., III, 394.

effect of, on response of rabbits to insulin, A., III, 730.

effect on, of sulphanilamides, in rats, A., III,

homeostatic adjustments after, A., III, 394. hyperglycamia after, A., III, 62.

oral and rectal temperatures after, A., III, 62. psychology and, A., III, 62.

Muscular system, constitutional peculiarities of,

in Karakal sheep, A., III, 317. Mushrooms. See Psalliota campestris.

Musk, American, A., II, 176.

Mussels, mytilitol from, A., II, 219.

Mustard gas, action of, A., III, 363.

mechanism of, rôle of chlorine in, A., III,

determination of, field apparatus for, C., 117. emaciation due to, A., III, 62.

poisoning by. See under Poisoning. sensitisation to, A., III, 363.

See also Diethyl sulphide, $\beta\beta'$ -dichloro-. Mustard oil, from seeds adulterated with Argemone dropsy epidemic mexicana, associated with, A., III, 835.

toxicity of, in relation to dropsy, A., III, 282.

Mustard plants, black, sulphur content of, A., III. 783.

Mustela vison. See Mink.

Mustelids, pregnancy duration in, A., III, 447. Mutis, Jose Celestino, A., I, 207.

Myasthenia gravis, A., III, 800. acetylation in patients with, A., III, 459. anterior mediastinotomy in, A., III, 724. nature of, A., III, 459.

serum-choline-esterase in, effect of muscular exercise on, A., III, 13.

treatment of, with prostigmine bromide, bromidism after, A., III, 214. with thymectomy, A., III, 176.

Mycobacterium, disintegration of, A., III, 697. nutrition and respiration of, A., III, 147.

Mycobacterium lepræ, effect of X-rays on, A.,

III, 617.

tuberculosis, Mycobacteriumstercusis and filtration of, through gradocol membranes, A., III, 699.

Mycobacterium tuberculosis, cultivation of, in market eggs, A., III, 698.

pigment formation by, from p-aminobenzoic acid, effect of sulphanilamide on, A., III, 848.

Mycorrhiza, in forestry, A., III, 383.

Mydriasis, paradoxical, cholinergic porphyrin lachrymation and, in rats, A., III, 360.

Mydriatus, synthetic, A., II, 46.

Myelofibrosis, leukæmia and osteosclerosis in relation to, A., III, 455.

Myelography, contrast, A., III, 247. Myeloma, multiple, with liver infiltration and low prothrombin purpura, A., III, 257. of skull. See under Skull.

Myelomatosis, plasma-cell, with renal metastasis and tubular obstruction, A., III, 668.

Myenteric plexus, acetylcholine in, and resistance to anoxia, A., III, 580.

Mylabris pustulata, A., II, 80.

Myocarditis in children, A., III, 719.

isolated, associated with dietary deficiency, A., III, 638.

Myoglobin, reversible conversion of, into cytochrome, A., III, 100, 330, 579.

Myokinase, adenylpyrophosphatase and, A., III, 613.

Myometrium. See Uterus, muscle of.

Myopia, actiology and pathogenesis of, A., III.

congenital, with convergent strabismus, A., III. 403.

with fundus changes, A., III, 183.

familial, A., III, 530. problem of, A., III, 530.

Myopia nocturna, A., III, 463.

Myosin, adenosine-triphosphatase activity, electrophoresis, and sedimentation of, A., III, 579.

flow-birefringence and viscosity of, effect of adenosine triphosphate and muscular contraction on, A., III, 498. potassium in, A., III, 17.

small-angle interference in, A., I, 240; III, 764.

Myosmine, formation of, from nicotine, A., II, 354.

Myotis lucifugus, growth of ovarian follicle and ovulation in, A., III, 592.

implantation in, A., III, 627. Myotropism, angiotonin, A., III, 328.

Myristic acid, glycidyl and β -methylglycidyl esters, A., II, 90.

Mytilitol, hydroxy-, and its hepta-acetate, A.,

II, 219. isoMytilitol, bromo-, hydroxy-, and iodo-, and

their derivatives, A., II, 219. n- and iso-Mytilitols, and their derivatives, A., II, 219.

Myxidium gasterostei, nuclear changes in, A., III,

Myxobacteria, pathogenic, A., III, 846. Myxœdema, adult and juvenile, pregnancy occurring in, A., III, 26.

basal, metabolic rate and thyroid dosage in, relation between, A., III, 26. capillary permeability in, A., III, 719.

effect of, on hæmopoiesis in leukæmia, A., III,

renal function in, A., III, 257.

Myxœdema, with extreme hypercholesteræmia, A., III, 807.

with macrocytic anæmia, treatment of, with testosterone and thyroid, A., III, 240.

Myxoglobulosis, appendical mucocele and, A., III, 113.

Myxomycetes, shock anæsthesia in, A., III, 143.

N.

with, Vincent's angina N.A.B., treatment during, A., III, 60.

Nævus flammeus, facial, with intracranial hæmangioma and psychosis, A., III, 22. Nails, finger, changes in, in internal diseases, A.,

III, 38. Nail polishes, dermatitis from, A., III, 283.

Naphthas, aniline points of, standard for, C., 165. Naphthacene, effect of, on hydrocarbon fluorescence, A., I, 28.

fluorescence of, in presence of anthracene, A., I. 97.

Naphtha-2':3'-1:2-chrysene, and its compound with s-trinitrobenzene, A., II, 126.

Naphtha-2':3'-1:2-chrysene-1:4'-quinone, II, 126.

Naphthalene, chlorinated, toxicity of, A., III, 363.

crystals, fluorescence of, A., I, 212. formation of, with β -naphthol β -naphthylamine, A., I, 154.

derivatives, c-mitotic action of, A., III, 381. sulphonation of, in presence of boron fluoride, A., II, 156.

synthesis of, A., II, 93. determination of, in coal-tar distillates and

coke-oven gas, C., 68. in firelighters, C., 118.

in gases, by active carbon, C., 68.

equilibrium of, with naphthylamines and naphthols, A., I, 176. nucleus, physico-chemical properties of, A., I,

52.

solubility of, in alcohols, A., I, 82.

spectrum of, absorption and fluorescence, and of its derivatives, A., I, 97. Naphthalene, 2-amino-8-hydroxy-, N-acetyI

derivative, A., II, 347. 1:2:3:4-tetrabromo-, 1:3-dibromo-2-nitro-, 1:3:4-tribromo-2-nitro-, and 4-chloro-1:3-

dibromo-2-nitro-, A., II, 95. chloro-derivatives, precautions in use of, A.,

III, 430. I:3-dihydroxy-derivatives, A., II, 130.

1:3-dinitro-, monoreduction of, A., II, 127. 2:3-dinitro-, preparation of, A., II, 74. 2-nitro-4-cyano-, A., II, 127.

Naphthalene series, synthesis in, A., II, 128, 130, 139, 195.

a-1-Naphthaleneazoacetoacetic acid, y-bromo-, ethyl ester, A., II, 332.

3'-Naphthalene-1'-azobenzene-4-sulphonamide,

4'-hydroxy-, A., II, 257. a-1- and α -2-Naphthaleneazo- β -ketobutyro-

lactones, A., II, 332. Naphthalene-1':2-azo-1-naphthol, 4:4'-dinitro-,

A., II, 96. 2-Naphthaleneazo-β-naphthol, 1:6-dinitro-, A., II, 98.

Naphthalene-1':2-azo-1-naphthylamine, 4:4'-dinitro-, A., II, 96.

Naphthalene-1-diazonium chloride, 3-nitro-, zinc chloride double salt of, A., II, 127.

Naphthalene-2-sulphinic acid, thallium salt, A., II. 66.

Naphthaquinones, condensation of, with polar ethylenes, A., II, 164.

1:4-Naphthaguinone-2-acetic acid, 3-bromo-, ethyl ester, A., II, 346. periNaphthindanone, 2:3-dichloro-, A., II, 136.

periNaphthindenone, reaction of, with chlorine, A., II, 136. per:Naphthindenone, 2-chloro-, and its hydro-

chloride, and dichloro-, A., II, 136. per: Naphthindenone chloride, A., II, 136.

NN'-Naphtho- ψ -180 cyanine chloride, A., I, 3.

2:3:6:7-tetrahydroxy-, 1:4:5:8-Naphthodioxan, and its 2:3:6:7-di(dimethylmethylene) derivative, A., II, 346.

1-Naphthoic acid, β diethylaminoethyl ester, hydrochloride, A., II, 16.

2-Naphthoic acid, 5:8-dichloro-, and its deriv-

atives, A., II, 336. Naphthol. 2-1-Naphthol, and 4-bromo-6-nitro-, 2:4-dibromo-6-nitro-, 2-chloro-4-bromo-6nitro-, 2-chloro-6-nitro-, 2- and 4-iodo-6nitro-, and their derivatives, A., II, 97. 6-nitro-, preparation of, A., II, 97.

2-nitroso-, use of, as reagent for cobalt, C., 163.

crystal formation of, with 2-Naphthol, naphthalene, A., I, 154. dimerisation of, A., I, 281

2-Naphthol, 4-bromo-, 4-chloro-, and 4-iodo-, and their derivatives, A., II, 12.

5:8-dibromo-, and 5:8-dichloro-, and their methyl ethers, A., II, 337.

1-bromo-4:5-dimtro-, A., II, 97.

4-halogeno-, and 4-nitro-, preparation of, A., II, 12.

Naphthols, nitro-, reactions of, A., II, 97. and β -Naphthols, equilibrium of, with naphthalene, A., I, 176. a- and

1-Naphthol-4-arsonic acid, 2-amino-, A., II, 243.

Naphtholsulphonic acids, iodocarboxyand iodosulphobenzeneazo-derivatives synthesis of, A., II, 331.

acid, 1:4-α-Naphthisooxazine-6-arsonic 4-hydroxy-, A., II, 243.

Naphthoxyacetic acid, effect of, on development, A., III, 782. shoot

2-Naphthoylhydrazine, 5:8-dichloro-, and its hydrazones, A., II, 336.

1-a-Naphthoylmethylpyridinium perchlorate and iodide, A., II, 347.

2-β-Naphthoyloxypyridine, A., II, 378.

2-β-Naphthoyloxyquinoline, A., II, 378. N'-a-Naphthoylsulphanilamide, A., II, 365.

a-Naphthyl sulphate, p-bromoaniline salt, A., II, 256.

vinyl ether, A., II, 97.

Naphthylacetic acid, effect of, on shoot development, A., III, 782.

a-1-Naphthylacetic acid, β -diethylaminoethyl γ -diethylamino-n-propyl, β -morpholinoethyl and β -piperidinoethyl esters, hydrochlorides, A., II, 336.

β-2-Naphthyladipic acid, and β-hydroxya-methyl-a'-hydrogen ester, lactone, A., II,

a-Naphthylamine, reaction of, with copper and mercury thiocyanates, in aqueous solution, C., 106.

1-Naphthylamine, 2:4-dibromo-3-nitro-, 3-nitro-, and their derivatives, A., II, 95.

3-nitro-, derivatives of, A., II, 95. reactions of, A., II, 95.

separation of, from 4-nitro-2-naphthalene, A., II, 330.

from 4-nitro-2-naphthvlamine, A., II, 127.

4-nitro-, diazonium salts, decomposition of, by sodium sulphite and sodium acetate, A., IĬ, 96.

2:3-dinitro-, A., II, 74.

β-Naphthylamine, crystal formation of, with naphthalene, A., I, 154.

2-Naphthylamine, 1:3:4-tribromo-, A., II, 95. 1-bromo-4-nitro-, and its acetyl derivative, A., II, 330.

5:8-dichloro-, and its benzoyl derivative, A., II, 337.

3-nitro-, and its acetyl derivative, A., II, 74. 4-nitro-, and its derivative, A., II, 330. bromination of, and its separation from

3-nitro-1-naphthylamine, A., II, 330. separation of, from 3-nitro-1-naphthylamine, A., II, 127.

I:6-dinitro-, diazotised, decomposition of, by precipitated copper in organic solvents, A.

 α - and β -Naphthylamines, equilibrium of, with naphthalene, A., I, 176.

Naphthylaminesulphonic acids, iodocarboxy- and iodosulphobenzeneazo-derivatives of, synthesis of, A., II, 331.

4-a-Naphthylaminopyrimidine, 2-amino-, A., II,

 $2-\beta$ -Naphthylaminotriphenylcarbinol, A., II, 276. N-β-Naphthylanthranilic acid, methyl ester, A.,

 β -2-Naphthyl- Δ^a -butene- $\alpha\delta$ -dicarboxylic A., II, 266.

1-Naphthyl-n-butylmalonic acid, diethyl ester, A., II, 336.

a-1-Naphthyl-n-butyric acid, and its derivatives, A., II, 336.

N-2-Naphthylearbamic acid, 5:8-dichloro-, ethyl and methyl esters, A., II, 337.

1-Naphthyl carvacrylmethyl ketone, A., II, 41. 2-a- and - β -Naphthyleinehonic acids, A., II, 379. 2-a-Naphthyl- $\Delta^{1';2'}$ - or $-\Delta^{1;1'}$ -decahydrodiphenyl, 2-hydroxy-, A., II, 215.

3-a-Naphthyl-2:4-diketotetrahydroquinazoline, A., II, 274.

N-a- and $-\beta$ -Naphthyl-N'N'-dimethylsulphamides, A., II, 364.

1-Naphthylethylmalonic acid, diethyl ester, A., II, 336.

a-1-Naphthyl-n-hexoic acid, and a-hydroxy-, A., II. 336.

 δ -2-Naphthylimino-n-pentan- β -one, A., II, 235 1-Naphthylmaleamic acid, 3-nitro-, A., II, 330. 2-Naphthylmaleamic acid, 4-nitro-, A., II, 330. $2-\beta$ -Naphthylmethoxybenzoic acid, 3:5-dichloro-,

A., II, 100. N-a-Naphthylmethylethylenediamine, A., II, 366.

1-a-Naphthyl-2-methylcyclohexane-2carboxylic acid, and its ethyl ester, A., II, 190.

1-a-Naphthyl-2-methylcyclohexanol-2-

carboxylic acid, ethyl ester, A., II, 190. 1-a-Naphthyl-2-methyl-46-cyclohexene-2carboxylic acid, ethyl ester, A., II, 190.

1-Naphthylmethylmalonic acid, diethyl ester, A., II, 336.

3-2'-Naphthylcyclopentanone, 3-6'-hydroxy-, and its semicarbazone, A., II, 266.

cis-3-b-Naphthylcyclopentanone-2-acetic A., II, 225.

3-2'-Naphthyl-△2-cyclopentenone, 3-6'-hydroxy-, and its methyl ether and semicarbazone, A., II, 266.

 α -1-Naphthylpropionic acid, β -diethylaminoethyl, y-diethylamino-n-propyl, β-morpholinoethyl and β -piperidinoethyl esters, hydrochlorides, A., II, 336.

 γ -1-Naphthyl- Δ^{α} -propylene, a-chloro-, dipole moment of, A., I, 142.

1-Naphthyl-n-propylmalonic acid, diethyl ester, A., II, 336.

2-a- and - β -Naphthylquinolines, and their picrates, A., II, 379.

2-α-Naphthyl-1:3:5-triazine, A., II, 349.

a-Naphthyl undecyl ketone, A., II, 41.

a-1-Naphthyl-n-valeric acid, and a-hydroxy-, A., II, 336.

1:8-Naphthyridine, homologues, synthesis and hydrogenation of, A., II, 236.

Narcotics, action of, application of absolute reaction rates theory to, A., III, 59.

on metabolic processes in central nervous system, A., III, 212.

preoperative, effect of, on nausea and vomiting during abdominal operations under spinal anæsthesia, A., III, 495.

See also Anæsthetics, Drugs, Hypnotics, etc. Nasopharynx, cancer of. See under Cancer. Nasturtiums, nitrogen absorption and distribution in, effect of boron on, A., III, 514.

Natrophilite, structure of, A., I, 216. Navicula torquatum, polyene pigment of, A., III,

670. Navy beans. See under Beans.

Nebulæ, spiral, nuclear emission in, A., I, 50. Neck, operations on, anæsthesia for, A., III, 361.

Necrosis, aseptic, bone infarcts and, in caisson and non-caisson workers, A., III, 799. Needles, for feeding rats by injection, C., 93. Negroes, blood groups among, in New York City, A., III, 787. Negroes, physical development of, A., III, 159 449, 787.

Neisseria, agglutinative reactions of, A., III, 562.

isolation of, agar-less medium for, A., III, 74. Neisseria gonorrhea, glutathione as growth factor for, A., III, 617.

growth requirements of, A., III, 697.

Nelumbo nucifera, rhizomes, hydrolysis of starch from, by wheat β -amylase, A., III, 612. Nematodes, infections by, treatment of, with phenothiazine in man, A., III, 134.

Nematospiroides dubius, host-parasite relations

of, with laboratory mice, A., III, 306.

Neodymium ions, radiation fields of, in salt crystals, A., I, 73.

spectrum of, arc, A., I, 113.

Neodymium trichloride, spectrum of, absorption, A., I, 113.

Neodymium determination :-

determination of, spectrochemically, C., 199. Neon, adsorption of, on nickel plates, A., I, 151. formation of, from sodium decay, A., I, 1.

Neophyl chloride. See β-Phenylisobutane, a-chloro-.

Neoplasms, A., III, 118.

chromosomes of, size and synthetic activity of, in rats, A., III, 819.

genetic character of, determined by transplantation, A., III, 544.

human, in tissue culture, A., III, 349. stomach after operation for, A., III, 814.

transplantable, immunisation against, dosage importance in, A., III, 479.

B vitamins in, in man, mouse, and rat, A.,

Neoplastic disease. See under Diseases. Neoprene, detection of, in rubber compounds, C., 123.

Neosalvarsan, detoxication of, by organic acids, A., III, 609.

effect of, against pneumococci in bone marrow cultures, A., III, 492.

Neostam, treatment with, of filariasis in cotton rat, A., III, 758.

Neostibosan, treatment with, of filariasis in cotton rat, A., III, 758. Neostigmine bromide, protection by, against

anoxia, A., Ill, 329. Neosynephrin, effect of, on gaseous exchange of

brain, A., III, 22. in oil, cardiovascular response to, preparation

to, A., III, 57. reflex activation of vagus by, heart response to, A., III, 636.

Nepheline, concentrates, determination in, of alumina, C., 60.

Nephrectomy, by scalpel and high-frequency current, A., III, 38.

life after, A., III, 117.

unilateral, treatment with, of hypertension, A., III, 540.

Nephromas, embryonal, occurrence and transplantation of, in rabbits, A., III, 262.

Nephrosclerosis, production of, in fowls by sodium chloride, A., III, 257.

Nephrosis, after mapharsen and fever therapy of syphilis, A., III, 213.

plasma- and serum-proteins in, in infants and children, A., III, 167. proteins and proteinuria in, effect on, of

serum-albumin injection, A., III, 632.

syndrome of, effect of testosterone propionate on, A., III, 257.

Nepratine, and its derivatives, A., II, 383. Nereocystis leutkeana, pressure-composition of gas in, A., III, 307.

Nerves, acetylcholine and aneurin liberation in, after stimulation, A., III, 18.

activity of, acetylcholine and, A., III, 19. action on, of acetylcholine and its enzyme,

A., III, 177. afferent impulse frequency of, physiology of, A., III, 642.

axoplasm, electron microscope studies on, in squid, A., III, 18. potassium and sodium balance in, in squid,

A., III, 177.

Nerves, block of, suprascapular, A., III, 785. blood supply of, demonstration of, by injection, A. III, 446. experiments on, A., III, 19. cells, chromatolytic, phosphatase activity in,

A., III, 580. compression of, effect of, on Wallerian degeneration in vitro, A., III, 459.

constricted, endoneurial cedema in, A., III,

contractions of, effect on, of acetylcholine, atropine, and eserine, A., III, 647.

cranial, palsies of, with herpes, after dichloro-acetylene anæsthesia, A., III, 759.

dimensions of, as function of body weight, A., III, 580, 581.

endings and fibres, silver stain for, A., III, 161.

excitation of, electrical, A., III, 400. effect of interelectrodal distance in, A., III, 246.

rôle of polarisation in, A., III, 400. theories of, A., III, 643.

fibres, accommodation and autorhythmic

mechanism in, A., III, 178. regenerating, growth impairment and myelinisation in, subject to constriction, A., III, 459.

sheath birefringence as related to fibre size and conduction velocity in, of catfish, A., III, 18.

single, accommodation in, A., III, 18. photochemical experiments on, A., III,

grafts, autopsy, clinical use of, A., III, 800. impulse of, effect on, of acetylcholine removal by choline-esterase injections, A., III, 246. in biotin-deficient rats, A., III, 17.

intercostal, block of, relief of pleuritic pain by, A., III, 799.

laryngeal, superior, respiratory activity of, A., III, 175.

median, function of, test for, A., III, 724.

motor, end plates of, destruction of, by lactic acid, A., III, 528.

histopathology of, A., III, 459.

integration in, compared in various animals, A., III, 642.

nets of, activity of, logical description of, transformed into statistical calculus, A., III, 643.

theory of, A., III, 643. optic, coloboma of, A., III, 25.

connexions of, in sheep, A., III, 528.

drusen of, simulating cerebral tumour, A., III, 805.

meningo-encephalic gliosis of, A., III, 151. potential sources in, analysis of, in duck and goose, A., III, 179.

regeneration of, with return of vision in anurans, A., III, 337.

peripheral, conduction in, effect of pressure on, A., III, 19.

degenerating fascicles in, differential staining of, A., III, 93.

formation of chemical substances in, after stimulation, A., III, 177. injuries to, A., III, 331.

diagnosis of, in battle casualties, A., III, 580.

electrical skin resistance in, A., III, 177. regeneration rate of, in man, A., III, 177.

Schwann cells of, growth of, A., III, 389. stimulation of, aneurin liberation on, A., TIT. 18.

regeneration of, "neurotropism" in, evidence against, A., III, 724.

through frozen-dried nerve grafts in cats and monkeys, A., III, 400.

repair of, human fibrinogen for, A., III, 800.

resting potential of, aerobic and anaerobic fractions of, effect of potassium on, A., III, reunion of, histomechanical analysis of, after

tubular splicing in rats, A., III, 331. with sleeves of frozen-dried artery in cats, monkeys, and rabbits, A., III, 400.

Nerves, sciatic, injury to, due to paraldehyde injection, A., III, 211.

sensory, crossing of, functional results of, in rats, A., III, 19.

stimulation of, vasomotor reflexes produced by, in mammals, A., III, 20. spinal, roots of, diseases of, A., III, 330.

sutures for, plasma clot, A., III, 101.

sympathetic, crushing or cutting of, return of sweat gland function after, A., III, 332. paravertebral, block of, for painless labour,

A., III, 582. synapse of, morphology and surface relation

at, pathology of, in man, A., III, 101. thoracic, parietal intermuscular plexus of, A., III, 89.

tissues of, choline-esterase activity inhibited by eserine, A., III, 643. histamine in, A., III, 18.

tumours of, in female genitals and pelvis, A., III, 246.

vagus, supra-diaphragmatic section of, in duodenal ulcer treatment, A., III, 113. with arterial sleeves, pressure block in, A., III,

400. Nerve centres, inexcitability of, after central

nervous system destruction, A., III, 643. Nerve-muscle preparations, excitability of, comparative action on, of calcium chloride and gluconate, A., III, 800.

junction in, effect of calcium on, A., III, 399. Nerve-muscle regeneration, effect of intake of

B-complex vitamins on, A., III, 458. under different levels of vitamin-C intake, A., III, 603.

Nervous breakdown, in the Navy, due to domestic difficulties, A., III, 646.

Nervous system, cell growth in, A., III, 712. central, activity of, physiological effects of carbon dioxide on, in man in relation to high-altitude flying, A., III, 458.

carbonic anhydrase in, A., III, 401. destruction of, effect of, A., III, 581 technique for, in mammals, A., III, 581.

effect on, of acetylcholine after removal of parts of brain in cats, A., III, 401. of fatigue and muscular work, A., III, 283.

of morphine, in cats, A., III, 555. of vitamin-E therapy in sclerosis, A., III, 102.

functions of, effect of exposure to high pressure oxygen on, A., III, 329. glycogen content of, in cats and dogs, A.,

III, 178. histological effects of piperine on, in housefly, A., III, 401.

injury to, hypotension and loss of pressor response to angiotonin after, A., III, 99.

metabolic processes in, effect of benzedrine and narcotics on, A., III, 212.

nerve cell activation in, humoral intermediation of, A., III, 401.

pathology of, in convalescent poliomyelitis in man, A., III, 19.

resistance of, to neuro-vaccine, A., III, 702. structural metabolism of, in relation to spleen, A., III, 331.

development of, bioche vertebrates, A., III, 580. biochemistry

sympathetic, effect of, on muscle proprio-ceptors of frog, A., III, 20.

visceral, of earthworm, A., III, 345, 647.

Neural tube, neural plate in, outer and inner layer of, in Anura, A., III, 318.

Neuralgia, trigeminal, atypical, treatment of, A., III, 22.

Neurilemmomas, in family of brook trout, A., III, 598.

Neurine, stimulation of gastric secretion by, A., III, 656. Neuritis, diabetic, treatment of, with vitamin- B_1 ,

A., III, 269. hematoporphyrinuric, A., III, 177. peripheral, in pernicious anæmia, A., III,

Neurodermatitis, with cataract, A., III, 335. Neurofibroma, of choroid, A., III, 532. of vagus, A., III, 822.

Neurofibromatosis, general. See Recklinghausen's disease.

roglia, from cerebral explantation of, A., III, 5. Neuroglia, from white matter.

peripheral, A., III, 5. Neurohypophysis. See Neuropituitary. Neurology, in otolaryngology, A., III, 105. vitamin-E in, III, 202.

war, A., III, 403.

Neuroma, prevention of, by encasement of severed nerve end in rigid tubes, A., III, 724. Neurones, efferent, recovery of, chromatolysis and, A., III, 459.

motor, differentiation of, in transplanted lumbo-sacral spinal cords of chick embryos, A., III, 3.

phrenic, repetitive activity in, basis for, A., III, 178.

sensory, growth characteristics in processes of, A., III, 788.

theory of, A., III, 246.

ventral horn, reflex activity of, effect of retrograde degeneration on, A., III, 460.

Neuropituitary, histogenesis of, in pigs, A., III, 711.

Neuropsychiatry, at R.A.F. centre, A., III, 646. fatigue in patients in, due to hypoglyæmia, A., III, 102.

military, in present war, A., III, 23.

review of, A., III, 331.

Neurosis, effect on, of morphine in cats, A., III, 646.

in flying personnel, A., III, 176.

ocular manifestations of, among soldiers, A., III, 23.

war, A., III, 801.

Neurospora, d-amino-acid oxidase of, A., III, 764.

growth and respiration of, A., III, 613, 614. tryptophan synthesis by, from indole and

serine, A., III, 142.
Neurospora crassa, growth of, requiring *soleucine and valine, A., III, 291

mutant of, leucineless, A., III, 769. ornithine cycle in, A., III, 770.

Neurosurgery, fibrin films in, and their use in dural defect repair and prevention of meningococcal adhesions, A., III, 796. fibrin foam as hæmostatic agent in, A., III,

795. Neurosyphilis, fever induced in, electro-

encephalographs in, A., III, 724.

Neurotomy, presacral, for vesical pain and neurogenic vesical dysfunction, A., III, 801.

Neutrons, absorption of, in cadmium and in

rare earths, A., I, 189. cytological effect of, and of X-rays, A., III, 215.

emission of, from nuclei with odd charge, A.,

I, 75. energy of, A., I, 114.

fast, energy of, A., I, 51.

generator of, intensity determination of, A., I, 189. interaction of, with protons, caused by spin

particles, A., I, 190. scattering of, at deuterons and protons, A., I,

slow, absorbers of, effective cross-section of, formula for, A. I, 189. absorption of, effective cross-sections for,

A., I, 189. inelastic scattering of, A., I, 139.

thermal, transmission of, through magnetie iron, A., I, 1.

Newts. See Triturus viridescens.

Niacin, content of, in grain sorghums, A., III,

Nickel, adsorption on, of gases, A., I, 151.

carbon-saturated, magnetic properties of, A., I, 242.

catalytic, A., I, 254.

ferromagnetism in thin layers of, A., I, 272. films, adsorption by, at high temperatures, A., I, 244.

polycrystalline, magnetostriction of, A., I,

solubility of deuterium in, A., I, 34.

Nickel alloys, with aluminium, reduction with, A., II, 154, 258; C., 19. with aluminium, copper, and iron, magnetic properties of, A., I, 277.
with antimony, A., I, 170.
with antimony and copper, analysis of, C., 11.
with antimony and iron, A., I, 244. phase transitions in, A., I, 102. structure of, A., I, 272. with carbon, magnetic properties of, A., I, 150. with copper, and with iron and molybdenum, passivity in, A., I, 198. with copper and iron, dissociation of, A., I, 54, 244. with iron, effect of cold-work on, A., I, 34. with iron and silicon, A., I, 10. with iron and sulphur, A., I, 177. with molybdenum, A., I, 57. crystal structure of, A., I, 217. Nickel bases (nickelammines), instability constants of, A., I, 127. Nickel salts, determination in, of cobalt, C., 67. Nickel perchlorate, spectrum of, absorption, A., I, 275. halides, spectra of, crystalline and gaseous, A., I, 116. halide ammoniates, crystal structure of, A., I, hydrides, composition and formation of, A., I, 183, 256. hydroxide, colloidal sols, A., I, 247. oxidation of, electrochemically, A., I, 88. periodates, A., I, 90. perniobate, lattice constants of, A., I. 195. nitrides, A., I, 45. monoxide, compound of, with sodium oxide, A., I, 206. structure of, A., I, 269. sulphate, crystals, magnetic rotation of, in infra-red A., I, 6. tellurides, A., I, 45. Nickel organic compounds, complex, with toluamidoxime, A., II, 221. polycyclic inner-complex, extinction curves of, A., I, 191. Nickel bisnicotinylacetonate, A., II, 377. tetracarbonyl, history of, A., I, 180. molybdates, complex, A., I, 292. Nickel detection, determination, and separation :analysis of, electrochemically, C., 113. detection of, in cobalt, C., 163. in presence of cobalt, iron, and zine, C., 162. determination of, C., 13. in bronze, colorimetrically, C., 163. in cast iron and steel, C., 15. in presence of cadmium, cobalt, copper, and zinc, C., 154. in stainless steel, spectrographically, C., 67. in steel, colorimetrically, C., 163. with ammonia, colorimetrically, C., 15. with diguanide sulphate, C., 67. electrolytic, determination in, of cobalt, colorimetrically, C., 15. separation from, of copper, C., 105. Nickel minerals, lead vein, Pontpean, A., I, 208. Nickelocyanic acid, and its salts, A., I, 292. Nicotiana, polyploidy in, colchicine-induced, A., III, 155. tumour formation in, A., III, 383. Nicotinallylamide, A., II, 309. of Nicotinamide, acceleration co-ordinated muscular effort by, A., III, 270. determination of, in pharmaceutical preparations, C., 183. excessive feeding with, effect of, on guinea-pigs and rabbits, A., III, 752. isolation of, from asparagine and glutamio acid, A., II, 274. methochloride, determination of, in urine, C., 177. urinary elimination of, by man, A., III, 753.

methylation of, by rat's liver, in vitro, A., III,

treatment with, of frostbite, A., III, 62.

130.

riboside, A., III, 270.

Nicotin-n-amylamide, A., II. 309.

Nicotinbenzylamide, A., II, 309.

Nicotindibutylaminopropylamide, A., II, 309. Nicotine, decomposition of, by animal tissues, A., III, 286. by bacteria, A., III, 371, 696. determination of, in tobacco, C., 86, 185. formation of, in tobacco roots, A., III, 853. oxidation of, to nicotinic acid, A., II, 273. pyrolysis of, to myosmine, A., II, 354. sulphate, in solution with copper sulphate as anthelmintic for lambs, A., III, 681. Nicotine, amino-derivatives, carbazo-condensed systems from, A., II, 111. Nicotinediazidocopper, A., I, 290. Nicotinic acid, amides of. A., II, 309. and its derivatives, effect of, on co-enzyme and factor V in blood, A., III, 270. urinary excretion of, A., III, 824. as growth substances for pea roots, A., II, bee bread and royal jelly as source of, A., III, bispyridinium derivatives of, quaternary salts of, A., II, 348. content of, in American diet, A., III, 125. in tissues of monkeys fed maize, rice, and wheat diets, A., III, 200. deficiency of, A., III, 752. biochemical defect in, A., III, 270. purified rations in study of, A., III, 46. determination of, colorimetrically, C., 134. in blood and other body fluids, C., 76. in urine, C., 29. effect of, on blood-sugar level and its relation to adrenaline hyperglycamia, A., III, 270. on co-enzyme I content of chick tissues, A., III, 547. on post-operative vomiting, A., III, 682. on Salmonella choleræ-suis infections in pigs, A., III, 358. requirements of, A., III, 353. for growing pigs, A., III, 354. treatment with, of pseudosclerodermia, A., III, 48. Nicotinonitrile, hydrolysis of, by ammonia, A., II. 144. Nicotinyl chloride, A., II, 201. Nicotinylacetone, co from, A., II, 377. co-ordination compounds derivatives of, A., II, 377. Niemann-Pick disease, A., III, 606. Nikethamide. See Coramine. Ninhydrin, "ureide," synthesis and properties of, A., II, 59. Niobium, equilibrium of, with deuterium and with hydrogen, A., I, 37. Niobium pentoxide, reaction of, with sodium hydroxide, A., I, 90; C., 63. Niobium determination :determination of, in alloy steel, C., 9. in loparite ores, C., 12. Nippostrongylus muris, infection with, resistance of rats to, effect of vitamin-B, and -B, on, A., III, 602. Nitella, action current in, A., III, 138. Nitric acid. See under Nitrogen. Nitric oxide. See Nitrogen dioxide. Nitrides, metallic, A., I, 45. basically-substituted, Nitriles. aliphatic, catalytic reduction of, to diamines, A., II, 290. higher, solubilities of, A., I, 122. refractive index of, A., I, 147. basic, hydrogenation of, in presence of Raney nickel, A., II, 349. ethylenic, A., II, 361. reaction of, as acid anammouides, A., II, 173. Nitrites. See under Nitrogen. Nitro-alcohols, glucosides of, sensitive to alkali, A., II, 251. C-Nitro-alcohols, carbohydrate, A., II, 359. Nitro-compounds, aliphatic, A., II, 357. aromatic, spectra of, Raman, A., I. 267. diNitro-compounds, aromatic, reduction of, by alkaline sulphides and by acid stannous chloride, A., II, 11. triNitro-compounds, aromatic, electrolytic reduction of, to triamines, A., II, 77.

Nitrogen, activation of, at liquid air temperature, A., I, 264. in presence of mercury, A., I, 75. active, green phosphorescence of, A., I, 96. quenching of, A., I, 212. spectrum of, bands in, A., I, 235. at. wt. of, isotope-enriched, A., I, 188. Compton line and momentum distribution for, A., I, 30. dissociation energy and spectrum of, A., I, 115. electric discharge in, spectrum of, A., I. 95. equilibrium of, maintenance of, amino-acids for, A., III, 51. excretion of, in relation to fat content of diet, A., III, 197. fixation of, biochemically, A., III, 780. biologically, inhibited by carbon monoxide, A., III, 558. isotopes, A., I, 111. isotopic enrichment of, A., I, 231. liquid, atomic and electronic distribution in, A., I, 4. viscosity of, A., I, 32. metabolism of. See under Metabolism. molecules, spectrum of, ultra-violet, A., I, spectrum of, A., I, 264. absorption, ultra-violet, A., I, 27. band, A., I, 95, 235. forbidden transition in, A., I, 191. storage of, effect on, of ascorbic acid, cestrone, and testosterone propionate in dogs, A., III, 357. thermodynamics of mixtures of, with hydrogen, A., I, 127. utilisation of, A., III, 12. tervalent, stereochemistry of, A., II, 58. viscosity of, A., I, 32. balance of, during Nitrogen compounds, pregnancy and lactation in rats, A., III, 826. effect of low-lysine diet on, in man, A., III, 665. effect of work on, in geldings, A., III, 274.in pregnant women, A., III, 678. optically-active, tervalent, preparation of, A., urinary exerction of, effect of histidine on, in dogs given amino-acid mixtures intravenously, A., III, 274. Nitrogen tribromide, history of, A., I, 23. methyl chlorides, structure of, from electrondiffraction, A., I. 167. monoxide (nitrous oxide), anæsthesia with. Sec under Anæsthesia. analgesic effects of, compared morphine sulphate in man, A., III, 280. apparatus for flow of, in "to and fro" carbon dioxide absorption technique, A., III, 495. atomic and electronic distribution in, A., I, 4. narco-analysis of, A., III, 760. dioxide (nitric oxide), atomic and electronic distribution in, A., I, 4. determination of, with solid reagents, C., 158.dissociation energy and spectrum of, A., I, 115. magnetic susceptibility of, A., I, 7. poisoning by. See under Poisoning. reaction of, with acetylene, A., I, 179. with hydrogen, mercury-sensitised, A., I, 132. sound absorption and specific heat of, A., I, 121. spectrum of, A., I, 140. band, A., I, 95. emission, A., I, 77. per- or tetr-oxide, determination of, by cerate oxidimetry, C., 158. reaction of, with chlorine, A., I, 251. spectrum of, absorption, on aromatic films, A., I, 116.

pentoxide, complex of, with sulphur trioxide,

A., I, 231.

Nitrogen oxides, absorbents for, A., I, 35. determination of, in air, C., 110. Nitric acid, action of, on metals, A., I, 131. analysis of, in mixtures with sulphuric acid, conductometrically, C., 64. dissociation of, A., I, 249. formation of, equilibrium of, from infra-red absorption, A., I, 126. ionisation of, A., I, 37. rheochor and viscosity of, A., I, 56. transport numbers of, in water, A., I, 63. Nitrites, determination of, with Griess-Ilosvay's reagent, C., 158. with hydrogen peroxide, potentiometrically, C., 110. Hyponitrites, reactions of, A., I, 231. Pernitrous acid, constitution of, A., I, 133. Nitrogen organic compounds, heterocyclic, A., II, 58, 84, 277, 278. aa-dihalogeno-, properties of, A., II, 273. Nitrogen determination :-determination in, of oxygen, C., 11. determination of, amino-, in presence of tannin, C., 42. by Kjeldahl's method, decomposition of organic substances in, C., 190. in azo-compounds, by Kjeldahl's method, C., 22. in plant materials, C., 189. in skin, and its distribution, C., 79. in steel, C., 13. Nitroglycerin, poisoning by. See under Poison-Nitrones, A., II, 371. Nitroparaffins, ammonium salts of, A., II, 89. and their derivatives, effect of, on blood pressure and respiration of rabbits, A., III, electrolysis of, A., II, 30. reduction of, in liquid ammonia, A., II, 89. rheochor and viscosity of, and their isomeric nitrites, A., I, 56. Nitrophoska, lime-containing, determination in, of phosphates, C., 188. Nitroprussic acid, sodium salt, constitution of, A., I, 68. Nitropyrazole. See Di-(5-keto-1-p-nitrophenyl-3-methyl-4-pyrazolidene). Nitroso-compounds, aromatic, condensation of, with 2:4:6-trinitrotoluene, A., II, 371. Nitrosyl chloride, reaction of, with substituted amides of acetoacetic acid, A., II, 157. Nitrous oxide. See Nitrogen monoxide. Nitryl chloride, nitration with, A., II, 357. Nitzschia closterium, photosynthesis in, A., III, 706. Noble-Collip drum, circulatory reactions of rats traumatised in, A., III, 527.
Noble-Collip shock. See under Shock. Noise, industrial, in relation to hearing loss, A., III, 586. Nomographs, construction of, C., 56. Nonaethylenedecamine, and its benzoyl derivative, A., II, 249. Nonane, y-oximino-, A., II, 247. n-Nonane-αω-dicarboxylic acids, A., II, 3. Nonan-δ-ol, γ-nitro-, A., II, 152, 247. n-Nonatriacontane, A., II, 285. n-Nonatriacontan-v-one, A., II, 285. n-Nonoic acid, amyl and butyl esters, A., II, 3. Nonoic acid, β -amino-, and its derivatives, A., II, 324.a-cyano-; ethyl ester, A., II, 325. pp'-n-Nonyloxybenzylideneanisidine, A., II, 14. pp'-n-Nonyloxybenzylidene-ethylaniline, A., II, pp'-n-Nonyloxybenzylidene-n-propylaniline, A., II, 14. pp'-n-Nonyloxyhenzylidenetoluidine, A., II, 14. Nor-a-amyradienonyl acetate, A., II, 53. $\Delta^{5:5-20:22}$ -Norcholadienolactone- β -d-glucoside tetraacetate, 3:21-d:hydroxy-, A., II, 123. Norcholanic acid, 3:12-dihydroxy-, 12-mono-

and 3:12-di-acetyl derivatives, methyl esters,

3(a):12(b):20-trihydroxy-, and its triacetate,

methyl esters, A., II, 343.

A., II, 343.

INDEX OF SUBJECTS. 3(a):20:21-trihydroxy-, Norallocholanolactone, Nutrition, as basis of abnormal behaviour in 3(a)-acetate, A., II, 106. rats, A., III, 354. β' -[Norcholanyl-(23)]- $\Delta^{\alpha'}\beta'$ -butenolide, boy's, A., III, 749. β' -[3(a):7(a):12(β)-trihydroxy-], and its derivcalcium and iron allowances for, adequacy of, atives, A., II, 140. A., III, 485. β' -Norcholanyl-(23)- β' -hydroxybutanolide, dairy cattle, minerals in, A., III, 420. β' -[3(a)-7(a):12(β)]-trihydroxy-, and its β' -[7(a):12(β)]-diformate, A., II, 140. $\Delta^{20:22}$ -Norallocholenolactone, 21-hydroxy-, and deficiency of, dental caries in relation to, in Northern India, A., III, 544. in pathogenesis of disease, A., III, 264. incidence of, A., III, 600. its 21-acetate, A., II, 106. maternal, cleft palate due to, in rats, A., III, 3(a):21-dihydroxy-, and its 3(a)-acetate, A., II, 106. 317. $3(\beta):21$ -dihydroxy-, $3(\beta)$ -acetate, congenital malformations in rats due to, A., III, 673. 106. signs of, A., III, 482. diseases of, A., III, 41. 21-hydroxy-3(a):12(β)-d1hydroxy-, 3(a):12(β)diacetyl derivative. See 12-em-14-Deoxyas post-war problem, A., III, 264. dog's, A., III, 264. digoxigenin, 3:12-diacetate. Nordihydrolanostenone, and its derivatives, A., during pregnancy, effect of, on condition of II. 270. Norechinocystenedione, and its derivatives, A., II. infant at birth, A., III, 417. ewe's, lucerne and its fractions in, A., III, 375. isoNorechinocystenedione, and its derivatives, 351. horse's, riboflavin in, A., III, 547. A., II, 375. Norechinocystenol-A, and its acetate, A., II, human, proteins in, war and post-war, A., III, 343. 419. Norechinocystenone-A, A., II, 343. Norfriedelanone, A., II, 375. value of food yeast in, A., III, 417. vitamin-C in, germinating seeds as source of, A., III, 355. Norfriedelenedione, and its quinoxaline derivin industrial hygiene, A., III, 762. in industry, A., III, 264, 600. ative, A., II, 375. enolNorfriedelenedione, and its acetate, A., II, in pre- and post-operative care, A., III, 482. in pregnancy and lactation, A., III, 41, 264. in preventive medicine, A., III, 823. Norfriedelenone, and dibromo-, A., II, 375. Norlupanone, dihydroxy-, diacetyl derivative, A., II, 108. in relation to nation's health, A., III, 351. Norlupanone-2-acetic ethyI in tropics, A., III, 264. acid, dihydroxy- derivative of, A., II, 108. in war-time, A., III, 41. Norlupanonic acid, hydroxy-, acetyl derivative, and its methyl ester, A., II, 108. iodine in, A., III, 124. level of, assessment of, A., III, 45, 482. medical evaluation of status of, A., III, 123. Norluponalonic acid, hydroxy-, acetyl deriv-Middle Tennessee rural population, vitamin-A ative, methyl ester, A., II, 108. Nornicotine, determination of, in tobacco, C., 86, in, A., III, 546. 185. of farm animals, A., III, 482. Nose, occupational conditions of, in airmen. A., of London hospital staff, A., III, 41. of populations, A., III, 41. III, 184. treatment of, vitamins in, A., III, 582. protein in, for man, with reference to aminoacids, A., III, 484. Nose diseases, prevention and treatment of, biotherapy and chemotherapy for, A., III, requirement of, agricultural implications of food policy based on, A., III, 482. Notatin, properties of, A., III, 141. for hamsters, A., III, 483. for mass feeding, A., III, 264. in inanition, A., III, 669. Notoedres, lethal action on, of benzyl benzoate, dimethylthianthren, and tetraethylthiuram rhesus monkey's, requirement for, A., III, sulphide, A., III, 556. Nova Cygni, 1942, spectrum of, A., I, 50. Nova Herculis, spectrum of, A., I, 49. Nova Opiuchi 1604, spectrum of, A., I, 50. 271. role of biotin and "folic acid" in, A., III. 126. sheep's, fluorine-iodine relationships in, A., See also Opiuchi. III, 485. Nova Serpentis, spectrum of, A., I, 49. Novaldin, agranulocytosis after dosage with, value of, effect of large-scale catering on, A., A., III, 56. III, 483. vitamin- B_1 , in surgical patients, A., III, 672. Novatropine, effect of, on gastrointestinal vitamin-C, assessment of, in man, A., III, 201. motility and tone, A., III, 34. yeast in, A., III, 545. See also Catering, Diet, etc. Novocaine, anæsthesia with. See under Anæsthesia. Nyctotherus cordiformis, cultivation of, A., III, Noyes, William Albert, obituary notice of, A., I, 293. Nuclear chemistry, A., I, 2. Nucleic acids, A., II, 112; III, 118. Nyssa sylvatica, seed, freezing of, A., III, 513. Nystagmus, production of, A., III, 21. vestibular, A., III, 26. detection and determination of, in yeast, C., tissue-, A., III, 476. tissue growth and, A., III, 676. Nucleohistone, preparation of, from mammalian organs, A., III, 320. Nucleoproteins of chromosomes. See under 316. Chromosomes. Nucleotides, from hydrolysis of ribonucleic acid

by ribonuclease, A., II, 61.

phosphate groups in, A., III, 755. syntheses of, A., II, 112.

Nupercaine in glucose, anæsthesia with. See

polyphosphorylated, enzymic separation of

Nurses, hospital, sickness records of, A., III, 696.

Nutrition, adequate, role of food legislation in securing, A., III, 417.

and tolerance to atebrin, A., III, 552.

in tissues, A., III, 476.

under Anæsthesia.

Nuts, pea-. See Peanuts.

0.

Oak trees, U.S.A., vascular tissues of, A., III,

Oats, coleoptiles, cellular respiration and growth in, A., III, 382.

germination of, effect of X-rays on, A., III, 380.

proteins of, effect of processing on, A., III, 197.

Oatmeal, anti-oxygen preparation of, containing iron, A., III, 765.

Obesity, control of, action of benzedrine and propadrine in, A., III, 429.

heredity of, in yellow mice, A., III, 491. hypothalamic, produced in rats with chronic

hypopituitarism, A., III, 536.

280 Obesity, nature and treatment of, A., III, 550. Obstetrics, acidosis and alkalosis in, A., III, 796. anæsthesia in, caudal, A., III, 58, 211. continuous, A., III, 683. anæsthesia and analgesia in, A., III, 833. analgesia in, A., III, 682. embolism and thrombosis in, A., III, 11. endocrine therapy in, A., III, 109, 468. Rh factor in relation to, A., III, 391. use of sulphonamides in, A., III, 206. See also Gynecology. Ocelli, lateral, dioptic apparatus of, A., III, 182. See also Eyes, Vision, etc. allo Ocimene, pyrolysis of, to α - and β -pyronenes, apparatus for, C., 166. α - and β -pyronenes from, A., II, 245. spectra of, Raman, A., I, 118. Octadeca- $\beta\delta\zeta\mu\xi\pi$ -hexaen- ι -yne- $\theta\lambda$ -diol, A., II, Octadeca-yεηλνο-hexaen-ι-yne-βρ-diol, A., II, 178. Octadecane-\(\beta\rho\)-diol, A., II, 178. △a-Octadecene, electrophoresis of, A., I, 15. naturally-occurring, Octadecenoic acids, isolation and properties of, A., II, 318. Δ°- and Δπ-Octadecenoic acids, synthesis of, A., II, 119. 4'-n-Octadecoamidodiphenylsulphone, 4-amino-, 4-acetyl derivative, A., II, 131. Octadecylamine, derivatives of, A., II, 121. 2-Octadecylamino-6-methylpyridine, and its picrate, A., II, 274. 2-Octadecylaminopyridine, A., II, 274. 10-n-Octadecylphenothiazine, A., II, 353. △1:5-cycloOctadiene, 1:5-dichloro-, A., II, 154. Octa-Bη-dien-ε-yn-δ-ol, and its a-naphthylurethane, A., II, 178. Octa-δι-dien-α-yn-γ-ol, A., II, 177. Octa- $\gamma\epsilon$ -dien-a-yn- η -ol, A., II, 177. Octa- $\gamma\eta$ -dien- ϵ -yn- β -ol, A., II, 178. trans-as-Octahydroanthracene, A., II, 254. trans-as-Octahydroanthracene, ar- and 9-hydroxy-, A., II, 254. trans-as-Octahydroanthracenesulphonic acid. sodium salt, A., II, 254. 1:2:3:4:7:8:9:10-Octahydrobenzazulene, A., II, 254. 1:2:3:4:7:8:9:10-Octahydro-5:6-benz-7-azulol, A., II, 254.

1:2:3:4:7:8:9:10-Octahydro-5:6-benz-7-azulone, and its 2:4-dinitrophenylhydrazone, A., II, 254.

s-Octahydrophenanthrene-9:10-dicarboxylic anhydride, preparation of, A., II, 135. Octahydrophenazone, preparation of, A., II, 145. n-Octane, β-amino-, preparation and resolution of, and its derivatives, A., II, 360, 361.

 $a\theta$ -dithiol-, A., II, 2. β -Octanol, optically active, A., II, 150. Octan- β -ol, a-, γ -, and ϵ -amino-, and their benzoyl derivatives, A., II, 152. a-nitro-, A., II, 152.

Octan-γ-ol, β-nitro-, A., II, 152, 247.

Octan-δ-ol, γ-nitro-, A., II, 247. n-Octan-γ-ol-βη-dione, bis-2:4-dinitrophenyln-Octan- γ -ol- $\beta\eta$ -dione, hydrazone, and disemicarbazone, A., II, 198. dl-n-Octan-γ-yl, allophanate, A., II, 31. Octatrienal, ethynylcarbinol from, A., II, 177.

Δa-n-Octen-y-ol, in Mentha pulegium, A., II, 31. cis- and trans-Δa- and -Δβ-Octenonitriles, A., II,

Octofollin, clinical use of, A., III, 810. n-Octoic acid, ay-benzylideneglyceryl β-glyceryl esters, A., II, 2.

Octoic acid, B-hydroxy-, and its ethyl ester, A., II, 151.

pp'-n-Octoyloxybenzylidinetoluidine, A., II, 14. N^4 -n-Octoylsulphanildimethylamide, A., II, 26. N4-n-Octoylsulphapyridine, A., II, 26.

sec.-Octyl alcohol, surface tension of aqueous solutions of, A., I, 277. (+)- β -Octyl dihydrogen phosphite, A., II, 150. N- β -Octylglucamine, A., II, 251.

(-)-β-Octyloxyphosphorus dichloride, A., II, 150.

1-n-Octylcyclopentanol, 3:5-dinitrobenzoate, A., II, 219.

Odorants, carcinogens and, A., III, 261.

Œdema, famine, in prisoners of war, A., III, 669. nutritional, in vegetarian, A., III, 669. pulmonary, paroxysmal, treatment of, with reference to wartime conditions, A., III, 17.

production of, by thiourea in rats and its relation to age, A., III, 362. renal, treatment of, with acacia, A., III, 173.

subcutaneous, with limb muscle weakness, due to polyarteritis nodosa, A., III, 242. Enothera, tetraploidy in, colchicinc-induced, A.,

III, 313, 442, Enothera acautis, hypanthium, growth of, A.,

III, 622. Œsophagus, atresia of, congenital, A., III, 191.

ræntgenography in, A., III, 656. enlargement of, symptomless, A., III, 595 muscular hypertrophy of, idiopathic, A., III, 473.

ulcers in, dietary, in rats, A., III, 113. Œstradiol, benzoate, effect of, on liver cells, A.,

III, 412. hyperossification of long bones in rats

produced by, A., III, 735. effect of, on urinary excretion of ascorbic acid

in dogs, A., III, 109. inactivation of, in liver, A., III, 343. effect of dietary protein on, A., III, 658. effect of vitamin deficiency on, A., III, .742.

a-Œstradiol, adsorption of, on a chromato-graphic column, A., II, 265.

analysis of mixtures of, with β -cestradiol in urine extract, A., III, 734.

antifibromatogenic activity of progesterone with, A., III, 662.

fate of, injected into men, A., III, 189. β -Œstradiol, analysis of mixtures of, with α-cestradiol in urine extract, A., III, 734. a-45:7:9-Œstratrien-17-ylethyl methyl ketone,

 $3(\beta)$ -hydroxy-, and its acetate, A., II, 50. y-Δ^{5:7:9}-Œstratrien-17-yl-β-methyl-n-butan-β-

ol, $3(\beta)$ -hydroxy-, and its $3(\beta)$ -acetate, A., II, $\Delta^{6:7:9}$ -Œstratrien-17-yl- β -methyl- Δ^{α} -n-butene,

y-3(β)-hydroxy-, acetyl derivative, and its 3(B)-3':5'-dinitrobenzoate, A., II, 50. a-45:7:8-Œstratrien-17-ylpropionic acid,

3(β)-hydroxy-, methyl ester, A., II, 50. Œstriol, adsorption of, on a chromatographic column, A., II, 265.

fate of, injected into men, A., III, 189. ointment. See under Ointments.

180 Œstriol-A, and its methyl ether and triacetate, A., II, 165.

Œstrogens, and their esters, intrasplenic injection of, A., III, 190.

anti-mitotic action of, A., III, 92. bactericidal action of, A., III, 370.

biliary excretion of, after androgen injection in dogs, A., III, 473.

deficiency of, effect of æstrogen treatment on. in women, A., III, 736.

dermovascular effects of, in women with

menopausal flushes, A., III, 409. determination of, A., III, 593; C., 176. colorimetrically, in tissues, C., 78.

in blood, use of blood pellets in, A., III, 468

dosage of, survey of, A., III, 409. effect of, in ovipositor test, A., III, 738. on altitude tolerance of rats, A., III, 30.

on blood and bone marrow of mice, A., III,

on hamophilia, A., III, 792.

on mouse genitals after reproductive period, A., III, 593.

on testis in hepatic insufficiency, A., III, 410. on uterine β -glycuronidase activity, A., III,

538.

excretion of, A., III, 110, 189.

after androgen dosage in dogs, A., III, after cestradiol and cestrone injection in men

with liver cirrhosis, A., III, 593. ovariectomised mice with adrenal tumours, A., III, 735.

Œstrogens, excretion of, in milk from costrogenised cattle, A., III, 740.

in pregnant sheep's urine, A., III, 189. exogenous, romoval of, from circulation, A., III, 735.

fibroid induction with, in castrated monkey, A., III, 343.

mammary secretions induced by, chemistry of, in bovines, A., III, 739. metabolism of. See under Metabolism.

natural and synthetic, effect of, on liver, A., III, 469.

ovarian and urinary, fibromatic action of, A., III, 597.

ovarian stimulation by, A., III, 655.

prepuberal administration of, ovarian tumours after, in rats, A., III, 598.

prevention with, of post-partum breast engorgement, A., III, 410.

progesterone and, sexual receptivity induction by, in spayed mice, A., III, 594. response of intraocular endometrial implants

to, in rabbits, A., III, 735. role of, in malignant mammary lesion

production, A., III, 32.

synthesis of, A., II, 367. synthetic, A., II, 12.

carcinogenic hydrocarbons and, A., III, 261.

intrasplenic injection of, A., III, 735. lactation induction by, in bovines, A., III, 739.

of high activity, A., II, 217.

related to diphenylethane and stilbene, A., II, 128; III, 343.

treatment with, effect of, on cestrogen deficiency in women, A., III, 736.

mammary and testicular tumours in mice after, Å., III, 481. of cattle, A., III, 740.

of diabetes associated with menopause, A.,

III, 32. of dysmenorrhea, A., III, 810.

of dysuria and incontinence after menopause, A., III, 538.

of eclampsia and pre-eclampsia, A., III,

of menopause, A., III, 253. of salpingitis, A., III, 736.

of vulvovaginitis in children, A., III, 468. pituitary and related hypothalamic centre

reactions to, in hamsters, A., III, 465. response of mice to, effect of foster nursing on, A., III, 663.

tumorigenic action of, A., III, 594.

use of, during menopause, A., III, 736. yolk, in relation to humerus pneumatisation in

chicks, A., III, 594. (Estrone, adsorption of, on a chromatographic

column, A., II, 265. inactivation of, by micro-organisms, A., III,

in male rabbits, A., III, 32. injection of, effect of, on tissues, in bile fistula female dogs, A., III, 110. metabolism of. See under Metabolism.

sodium sulphate, oral therapy with, A., III, 32.

Œstrone, 16-oximino-,A., II, 165.

13-epiŒstrone, A., II, 230.

Œstrus, duration and periodicity of, in zebu and grade cattle, A., III, 654. effect of pituitary gonadotropins on, in ewes,

A., III, 190.

induction of, in ewes during ancestrous season, A., III, 408.

Oils, acid value of, determination of, substitute for benzene in, C., 74.

autoxidised, determination in, of active oxygen, C., 121.

blended, analysis of, C., 171. colour of, measurement of, C., 73.

commercial, analysis of, C., 171. detection in, of metallic driers, C., 26.

determination of, in boiler water and feed water, C., 1.

drying, bodied, and semi-drying, analysis of, C., 171.

Oils, edible, detection in, of adulteration, C., 180. of olive oil, C., 81. titre in, determination of, C., 81. fatty, bleach tests for, C., 171. for intramuscular injections, A., III, 556. fuel. See Fuel, oil. insulating. See Insulating oils. interfacial tension of, against sodium sec. alkyl sulphate solutions, A., I, 83. iodinated, determination in, of iodine, C., 137. lubricating. See Lubricating oils. mineral, ageing and miscibility of, measured by neutralisation number, C., 164. analysis of, C., 17. deposits, occurrence of, and gravitational anomalies, A., I, 296. prognosis of, A., I, 296. interfacial tension of, against polar compounds, A., I, 83. Ishimbay, A., I, 296. wetting power of, in sodium soap systems, A., I, 58. natural, oxidation of, C., 121. rancidity in, determination of, C., 81. seed, anti-acrodynic potency of, A., III, 48. separation of, from water surfaces, A., I, 246. spindle. See Spindle oil. sulphated, analysis of, C., 25. vegetable, determination of, C., 73. heats of fusion of, C., 202. refining tests for, C., 25. value of, compared with butter fat and olcomargarines, A., III, 419. Oil fields, Buguruslan region, sulphur in, A., I, 184. Oil films, surface, effect of, on water evaporation, A., I, 12. Oil shale. See Shale, oil. Oil wells, analysis of cores of, spectroscopic apparatus for, C., 56. potentials in logging of, A., I, 24. Ointments, bases for, absorption from, radioactive testing of, A., III, 137. estriol, treatment with, of valvovaginitis, A., III, 409. sulphonamide, A., III, 207. testosterone, A., III, 411.
12:13-18:19-Oleadiene-28-carboxylic acid, 2:x-dihydroxy-, 2:x-diacetyl derivative. methyl ester, A., II, 109. Oleanolic acid, structure of, A., II, 108. Olefines, alkylation by, in presence of aluminium chloride, A., II, 188, 194. a-methylenic reactivity in, A., II, 245. reaction of, with sulphur dioxide, A., I, 108. Δ^{a} -Olefines, physical data of, A., II, 177. Oleic acid, absorption of, from intestines, in rats, A., III, 473. ethyl ester, ozonide, catalytic hydrogenation of, A., II, 318. formation of, in organism compared with that of saturated fatty acids, A., III, 51. a'-glyceryl ester, A., II, 180. glycidyl ester, A., II, 90. methyl ester, union of, with gaseous oxygen at 20° and 120°, A., II, 150. naturally-occurring, isolation and properties of, A., II, 318. sodium salt, physical state of, A., I, 32. surface tension of, in mineral oil dispersions. A., I, 58. wetting power of, in mineral oil systems, A., I, 58 a-Olein, A., II, 120. Oleomargarines, value of, compared with butter fat and vegetable oils, A., III, 419. Oleum. See Sulphuric acid, fuming, under Sulphur. Oleyl chloride, A., II, 211. Oleylamine, einnamoyl derivative, and hydrochloride, A., II, 183. N-Oleylchaulmoogrylphthalimide, A., II, 183. Oleylthiocarbimide, A., II, 183. Olfactory system, oscillography of, in cats, A., III. 338.

Oligo-nucleotides, from animal tissues, obtaining

of, A., III, 118.

Oligophrenia, cerebral angiography in, A., III, Olives, butyric bacteria from, A., III, 222. Olive oil, absorption of, from intestines, in rats, A., III, 473. dermatitis from, A., III, 283. detection of, in edible oil mixtures, C., 81. Omentum, adhesions of, post-operative, A., III, Onchidella celtica, physiology of, A., III, 260. Onchocerciasis, diagnosis of, antigen for, A., III, 703. ocular syndrome in, A., III, 649. Oncorhynchus nerka, testes of, histology of, A., III, 237. Onion plants, roots, effect of colchicine on cells of, A., III, 155. electrical stimulation of, A., III, 515. Ontogeny, suture during, between previously fused dermal bones, A., III, 386. Onyalai, A., III, 240. gynæcology of, A., III, 162. See also Purpura, thrombocytopenic. Oophorectomy, menopause, vaginal smear, and urinary gonadotropin change after, in women, A., III, 811. effect of stilbæstrol on, A., III, 810. Operations, neurological and complications after, A., III, 460. psychological Ophiobolus graminis, physiology of, A., III, 290. Ophthalmia neonatorum. See Conjunctivitis, gonococcic, neonatal. Ophthalmology, blindness prevention in, A., III, 23. calculations in, radian methods for, A., III, chemotherapy in, A., III, 529. indications and contraindications of, A., III, 181. developments in, A., III, 332. military, A., III, 332 refraction and, A., III, 332. test in, for quantitative data, A., III, 529. use of prisms in, A., III, 24. vitamin-P in, A., III, 648. Ophthalmoplegia, retinal degeneration associated with, A., III, 726. Opianic acid, nitro-, dipiperidide of, A., II, 261. Opisthorchosis, cat, treatment of, with hexachloroethane, A., III, 214. 67 Opiuchi, spectrum of, A., I, 50. See also Nova Opiuchi. Opium, addicts to, morphine excretion in, with and without lecithin-glucose treatment, A., III, 834. withdrawal syndrome in, and treatment with lecithin and glucose, A., III, 280. distinction between preparations of, for smoking, C., 36. Opossums, brain of. See under Brain. sexual differentiation in, after gonadectomy, A., III, 466. See also Didelphys virginiana. Optics, physical, ametropia in, A., III, 333. Soviet research in, A., III, 332. Optic nerves. See under Nerves. Optical instruments, contrast and transmission measurements in, C., 150. Optical wedges, transmission characteristics of, C., 147. Oranges, determination in, of fluorine content, C., 91. peel, resistance of cells of, to injury, A., III, 87. Orange juice, buffer capacity and soluble constituents of, A., III, 441. Orange trees, nectar and pollen from, A., III, 315. nitrate absorption by, A., III, 228. Orasthin, effect of, on uterus after parturition, A., III, 60. Orchic extract, treatment with, optic function and ophthalmoscopic picture in eunuchoids during, A., III, 248. Orchids, germination and growth of, effect of vitamins on, A., III, 781. seeds, growth of, after frozen dehydration, A.,

III, 513.

Orchitis, Brucella abortus from, in bull, A., III, 617. Ores, analysis of, microchemically, C., 14, 16, soluble in phosphoric acid, C., 16. arsenic-tin-tungsten, determination in, of tungsten, C., 64. determination in, of gold, C., 5, 59. of zinc, with mercury thiocyanate, C., 59. Normetal mine, Quebec, paragenesis of, A., I, sulphide, celloform deposits of, Port au Port peninsula, Newfoundland, A., I, 259. Organs, changes induced by steroid compounds in, A., III, 109. extracts of, A., II, 104, 139, 285; III, 741. segmental, primordia of, heterochrony in, A., ĬII, 787. sense, effect of anoxia on, A., III, 403. sex. See Genitals, Ovary, and Testicles. Organic chemistry, preparations in, A., II, 89, semi-micro-technique in, A., II, 149, 156. Organic compounds, activity and ultra-violet absorption spectra of, A., I, 116, 132, 211, 227; II, 157, 159, 175. analysis of, C., 19. spectrochemically, with Raman spectra, C., 116. spot tests for, C., 168. bond energy and heat of formation of, A., I, crystals, growth of, A., I, 79, 99. detection of, reactions and reagents for, C., 118. determination in, of bismuth, C., 19. of halogens, C., 19. of iodine, C., 19. of phosphorus, C., 19. fluorescence of, A., I, 266. homologous, vapour pressure of, A., I, 148. insecticidal properties and structure of, A., II, 36; III, 133. isomorphism of, A., II, 100. lattice transformations in, order-disorder, A., I, 240. long-chain, heat of adsorption of, in relation to boundary lubrication, A., I, 245. magnetic investigation of, A., II, 189. mixed, analysis of, quantitative, C., 116. determination of composition of, by refractivity, C., 196. volatile, analysis of, C., 20. molecular, formation and structure of, A., I, 267; II, 16. oxidation of, by potassium permanganate, A., I. 41. preparation of, methods for, A., II, 1. semimicro-technique in, C., 194. purity determination of, C., 116. separation and purification of, by filtration of the molten cutectics, A., II, 117. spectra of, absorption, in solution, effect of molecular environment on, A., I, 28. vacuum ultra-violet, C., 97. Organisms, asymmetry of, in relation to optical activity of constituents, A., III, 39. cadmium in, A., III, 118. living, biochemical processes in, atmospheric influence on, A., III, 825. number of, determination of, by dilution method, C., 87.
of different biological phyla, vitamin-B content of, A., III, 267. spirally-twisted, relation between inversion of, and molecular inversion of their proto-plasmic constituents, A., III, 118. See also Micro-organisms. Organo-metallic compounds, A., II, 207. as antiparasitic agents, A., III, 836. electric moment of, A., I, 53. introduction into, of water solubilising groups, A., II, 66. long-chain, A., II, 66, 315. reactivities of, A., II, 55, 58. solvents for, A., II, 27; C., 24. Ornithodoros parkeri, spotted fever transmitted by, A., III, 79.

282 Ornithology, genera, species, and subspecies in, A., III, 517. Orogenital syndrome in avitaminosis. under Avitaminosis. Oroxylum indicum, seeds, baicalein from, A., III, Oroya fever, treatment of, with immune sera, A., III, 298. See Arsenic trisulphide. Orpiment. Orthoclase, plagioclase inclusions in, A., I, 208. Ortho-effect, new aspects of, A., II, 339. Orthopnosa, genesis of, pulmonary factors in, A., III, 175. Orthoptics, clinic for, in private practice, A., III, 802. for infant squinter, A., III, 333. prisms in, A., III, 333. Orthopyroxene, Mysore, A., I, 72. Oryzias latipes, light and reproductive activity in, A., III, 253. Oryzias melastigma, eggs, diapause in, A., III, 627.Oscillometric index, in evaluating arterial status of lower extremities, A., III, 640. Osmium, spectrum of, K-absorption, A., I, 233. Osmium organic compounds Osmium carbonyls, A., I, 159. Osmium determination :determination of, colorimetrically, C., 163. Osmosis, A., I, 200, 284. effect of freezing on, A., I, 56. with phosphates, A., III, 704. Osmotic pressure, A., III, 284. in mixed solvents, A., I, 169. theory of, A., I, 8. Osseous system, effect on, of adrenocorticotropic hormone, in rats, A., III, 732.

Ossification, pattern of, in relation to kinship in children, A., III, 386. sequences of, in triplets, A., III, 709. See also Bone, Cartilage, etc. Ossification centres, appearance of, seasonal variation of, in children, A., III, 709. development of, in infants, A., III, 2. Osteoarthropathy, pulmonary, in relation to dyspituitarism, A., III, 187. Osteoclasts, behaviour and origin of, A., III, Osteogenesis imperfecta, A., III, 2, 710. Osteomalacia, in pregnancy, A., III, 488. Osteomyelitis, harmatogenous, treatment of, with sulphonamides, A., III, 428. treatment of, and use of sulphonamides, A., III, 680. Osteopetrosis. See Albers-Schonberg disease. Osteosclerosis, leukæmia and myelofibrosis in relation to, A., III, 455. Otitis media, acute, treatment of, with sulphathiazole, A., III, 54. and complications, A., III, 405. tubular origin of, theory of, A., III, 249. with head pains and paralysis of 6th nerve. See Gradenigo syndrome. Otolaryngology, neurology in, A., III 105. treatment in, with penicillin, radon, sulphadiazine solution, and tyrothricin, A., III, 805. vitamins in, A., III, 464. Otoplasty, A., III, 517. Otorhinolaryngology, use of sulphanilamides in, A., III, 184. Otosclerosis, A., III, 532, 586. effect on, of A.T.10, A., III, 26. histologic, A., III, 805. so-called, of chickens, A., III, 405. Ouabain, toxicity of, effect of age of rabbits on, A., III, 428. treatment with, in heart failure, A., III, 57. Ova, fertilisation and maturation phases of, in man, A., III, 446. fertilised, implantation of effect of lactation on, in mice, A., III, 30. fertility of, in ewes treated with gonado-tropins, A., III, 470.

human, development of, A., III, 627.

nine to ten days old, A., III, 627.

III, 570.

intrauterine, distribution of, in rabbits, A.,

Ova, transuterine migration of, in sheep and other mammals, A., III, 447. unfertilised, fate of, in albino rat, A., III, 158. See also Eggs and Embryos. Ovalbumin, complexes of, with detergents, structure of, A., I, 124. crystalline, effect on, of acylating agents, A., II, 208. denaturation of, with carbamide, radiation, and heat, A., II, 114. native, denatured and coagulated, A., II, 67. precipitin reaction of, with rabbit antiserum, A., III, 704. sulphur content of, effect on, of denaturation, A., II, 67. Ovary, adhesions in, from organised liquor folliculi in monkeys, origin of, A., III, 734. adult, effect on, of hysterectomy in infantile rat, A., III, 409. birefringence, fluorescence, and histo-chemistry of, during reproductive cycle in rats, A., III, 342. bovine, response of, to pregnant mare's serum and horse pituitary extract, A., III, 654. cancer of, A., III, 669. embryonic, in young girl, A, III, 822. in children, A., III, 417. signet-ring cell, primary, A., III, 821. cysts of, associated with pregnancy, hermonal content of, A., III, 739. chemistry of, A., III, 810. hæmorrhagic, accompanying purpura, A., III, 810. in cats after pregnant mare serum hormone administration, A., III, 110. pseudomucinous, fluid of, A, B, and O blood group substances in, A., III, 391. effect on, of chorionic gonadotropin and pituitary synergist, in women, A., III, 812. of gonadotropins, in women, A., III, 190. fibroma of, with ascites and hydro-thorax, A., III, 197, 482. follicles, hormones of, effect anaphylactic shock, A., III, 343. theca cone of, and its tropism towards ovarian surface, A., III, 809. function of, in hypophysectomised rats, A., III, 734. grafts of, hormonal ambisexuality of, in female rats, A., III, 110. histology of, in rats in relation to mammary fibroadenoma, A., III, 349. hormones of, inactivation of, by liver, A., III, 735. hyperthecosis of, A., III, 600. hypertrophy of, in rats parabiotically united to antigonadotropic sera-treated litter mates, A., III, 809. polycystic, amenorrhœa and sterility due to, A., III, 812. response of, to gonadotropins, effect of nephrectomy on, A., III, 111. state of, endometrial histology, gonadotropin excretion, vaginal epithelium, and day of menstrual cycle in relation to, A., III, 811. stimulation of, by cestrogens, A., III, 655. struma of, A., III, 669. growth and function of, A., III, 669. teratoma of, solid, in young girl, A., III, 822. thecoma of, A., III, 600. tumours of, adrenal-like, associated with Cushing's syndrome, A., III, 465. adrenal rest, A., III, 465. prepuberal administration æstrogens in adult rats, A., III, 598. development of, after transplantation into spleen, in rats, A., III, 598, granulosa cell, luteinised, A., III, 481. with hæmoperitoneum and hæmothorax, A., III, 482. hormone-producing, nomenclature of, A., III, 196. masculinising, A., III, 408. vascular pattern of, during cestrous cycle in albino rats, A., III, 320. Ovens, electric laboratory, C., 48. Foamglas, laboratory, C., 145.

Overpotential. See Overvoltage. Overvoltage, corrosion and, A., I, 64. hydrogen, A., I, 18, 64. in concentrated acid solutions, A., I, 178. Ovipositor, test for, action of steroid hormones in, A., III, 537. Ovotestis, true, existence of, A., III, 472. Ovulation, control of, in cows, A., III, 537 effect on, of progesterone in rats, A., III, 411. human, time of, A., III, 654. induction of, in ewes, during ancestrous season, A., III, 408. in hypophysectomised rats, A., III, 33. in immature rats, A., III, 737. pituitary-induced, action on, of colchicine in frogs, A., III, 31. See also Superovulation. Owls, western burrowing. See Speciylo cunicularia hypugæa. Oxalacetic acid, ethyl ester, diphenylene-hydrazone of, A., II, 83. ketolisation of, A., II, 320. salts, enzymic decarboxylation of, A., III, 765. a-Oxalbutyric acid, diethyl ester, 2:4-dinitro-phenylhydrazone, A., II, 151. a-Oxalheptoic acid, diethyl ester, 2:4-dinitro-phenylhydrazone, A., II, 151. a-Oxalhexoic acid, diethyl ester, 2:4-dinitrophenylhydrazone, A., II, 151. Oxalic acid, activated, A., I, 21. antimony derivatives of, A., II, 320. calcium salt, determination of, gravimetrically, C., 195. hydrates of, A., I, 230. detection of, C., 119. in citric acid, C., 21. determination of, C., 70. gasometrically, C., 125. in urine, C., 177. formation of, from hexoses, biochemically, A., III, 219. oxidation of, biological, A., III, 64. by dichromates, induced by ferrous sulphate, A., I, 227, 253; C., 162. by oxygen in presence of manganese compounds, A., I, 107. silver salt, crystal structure of, A., I, 54. spectrum of, Raman, A., I, 97. thallium salt, A., II, 66. uranyl salt, use of, for rubber testing, C., 172. a-Oxalmyristic acid, diethyl ester, 2:4-dinitro-phenylhydrazone, A., II, 151. a-Oxalnonoic acid, diethyl ester, 2:4-dinitrophenylhydrazone, A., II, 151. a-Oxaloctoic acid, diethyl ester, 2:4-dinitro-phenylhydrazone, A., II, 151. a-Oxalvaleric acid, diethyl ester, 2:4-dinitrophenylhydrazone, A., II, 151. Oxazoles, formation of, A., II, 146. isoOxazole, 4-nitro-derivatives, transformation of, into pyrazoles, A., II, 238. isoOxazoles, A., II, 237. Oxazolidine-2:4-dione, analgesics from, A., II, 382. Oxidase, d-amino-acid, activity of, effect of tumour removal on, A., III, 764. in relation to growth of Walker tumour, A., III, 40. determination of, in rat-liver extracts, C., 37. in liver and liver nuclei of rats, A., III, 194. in liver extracts, 'A., III, 64. in liver of tumour-bearing rate, A., III, of 543. l-amine-acid, specificity of, A., III, 838. ascorbic, inactivation of, A., III, 364. preparation and properties of, A., III, 364. choline. See Choline-oxidase. creatinine, from rat fæces, A., III, 138. cytochrome, activity of, effect of adrenalectomy on, in rats. A., III, 589. in cancer tissue, A., III, 195. inhibitors of, effect of, on di-iodotyrosine and thyroxine formation, A., III, 216. separation of, into components, A., III,

498.

glycine, A., III, 365.

Oxidase, polyphenol, action of thiourea on, A., III, 612. quinine, distribution of, in animal tissues, A., III, 138. liver, effect of pregnancy on, A., III, 138. succinic, action of, inhibition of, by carcinogenic metabolic products, A., III, tea, A., III, 365. tea polyphenol, A., III, 139. xanthine, antibacterial action of, A., III, 439. Oxidase, diamino-, in micro-organisms, A., III, Oxidation, A., I, 20, 42, 228, 253. in sugar group, with lead tetra-acetate, A., II, 7.mechanism of, A., III, 677; C., 193. of organic compounds with permanganate, A., I. 41. with selenium dioxide, A., II, 57. See Oxidation-reduction potential. under Potential. Oxidation-reduction systems, potentiometric titration of, with indicators, C., 204. Oxides, basic, action of non-metals on, A., I, 255.electrolytic, conductivity of heated filaments of, A., I, 129. organic, of elements of nitrogen and sulphur groups, basic strength of, A., I, 16. 11(a):12(a)-Oxido-3(a)-acetoxycholanic acid. methyl ester, A., II, 51. 11(a):12(a)-Oxido-3(β)-acetoxycholanic methyl ester, A., II, 51. acid. 410:11-13:18-Oxido-2-acetoxyoleanene-12:19dione-20-carboxylic acid, methyl ester, and its derivatives, A., II, 108. $\gamma\delta$ -Oxido- Δ^{α} -hutylene, $\alpha\beta$ -dichloro-, A., II, 149. α -5:6-Oxido-3(β):17-diacetoxyandrostane, II. 229. 2:3-Oxido-2:3-dihydroindole, (5)-chloro-, and 2:3:5-trichloro-, A., II, 365. 17(a):22-Oxidoallohomo-ω-pregnan-3(β)-ol acetate, A., II, 141. 17(a):22-Oxidoallohomo- Δ^{20} - ω -pregnen-3(β)-ol, and its acetates, A., II, 141. α -5:6-Oxido-17-hydroxy-3(β)-acetoxyandrostane, A., II, 229. Oximes, action of Grignard reagents on, A., II, 306. aromatic, reaction of, with maleic anhydride, A., II, 222. Oxygen, activation of, by solid surfaces, A., III, 63. in the organism, A., III, 611. affinity changes of, in fish blood, A., III, 244. affinity for, of human feetal and maternal

180 Oxindigo, A., II, 204. Oxindole, synthesis of, A., II, 378. Oxycellulose, electrokinetic properties surface conductivity of, A., I, 84.

hæmoglobin, A., III, 17. atmospheric, spectrum of, A., I, 52.

atomic and molecular, negative ions of, A., I, 138.

consumption of, by skin, during hair cycle in white rats, A., III, 273. effect of hydrogen peroxide on, in frogs,

A., III, 273.

effect of serum-chloride concentration on, in dogs, A., III, 549.

effect of, on polycythæmia, A., III, 96. electron affinity of, A., I, 94.

explosions of, in mixtures with cyclopropane, prevention of, by dilution with helium, A., III, 429.

high pressure of, effect of exposure to, on central nervous system, A., III, 329. myocardial damage due to, A., III, 329. ignition of, mixed with argon and hydrogen,

A., I, 179. in blood from brains of post-mature feetal

rabbits, A., III, 579. inflammability of, mixed with methylene

chloride and nitrogen, A., I, 64. isotopes, A., I, 111.

of various origins, A., I, 134. separation of, A., I, 22. by water distillation, A., I, 291. Oxygen, labile state of, in photo-oxides, in relation to resonance in anthracene system, A., II, 130.

Iabile union of, with carbon, A., II, 130, 227. influence on, of supplementary cyclisations, A., II, 216.

low tension, blood of dog subjected to exposure to, A., III, 329.

effects of, value of carbon dioxide in counteracting, A., III, 578. survival of mice under, compared with

chicks, A., III, 329.

magnetic properties of, adsorbed on charcoal, A., I, 219.

magnetic susceptibility of, A., I, 7. for, physiologicallyapparatus controlled, A., III, 722.

mixtures poor in, survival of animals breathing, A., III, 642.

attachment of electrons molecules, determined by X-ray impulses, A., I, 187. poisoning by. See under Poisoning.

pressure of, in alveolar and expired air, at different atmospheric pressures, A., III,

solubility of, in titanium, A., I, 34. spectrum of, arc, A., I, 25.

treatment with, of shock, A., III, 398, 458. resuscitation and, A., III, 458.

Oxygen determination :-

determination of, dissolved in boiler-feed water, C., I.

in de-aerated water, iodine titration in, C., 64.

in gases, C., 63.

in inorganic compounds, C., 11. in molten iron and steel, C., 13.

in nitrogen, C., 11.

in small quantities, C., 159.

in solution, starch solution for, C., 186.

in town's gas, C., 11. in water, C., 89, 159.

photo-electrically, with amidol, C., 88. peroxidic, in autoxidised oils and fats, C., 121.

Oxygen electrodes. See under Electrodes. Oxyhæmoglobin, d metrically, C., 27. determination of, colori-

Oxytocics, and their use, A., III, 591.

Oxytocin, blood-pressure and cardiac effects of, in man, A., III, 733.

effect of, on arterial, placental, uterine, and venous pressures in pregnant women, A., III. 553.

inactivating principle for, in blood, A., III,

Oxyuris, eggs, under finger nails and in room dust, A., III, 622.

Oysters, anaerobic bacteria in, A., III, 697. common. See Urosalpinx cinerea.

Ozone, atmospheric, concentration of, measurement of, C., 63.

catalysis by, of oxidation of paraffins, A., I, 13Ĭ.

height of, in atmosphere, A., I, 134. reaction of, with thioethers, A., II, 359.

Ozone electrodes. See under Electrodes. Ozonides, and their fission, A., II, 287.

P.

Pachycarpic acid, ethyl ester, and its derivatives, A., II, 88. Pachycarpine, hydroxy-, constitution of, A., II, Pachyrrhizus erosus, rotenone in, A., III, 316.

Packing, spherical, geometry of, A., I, 167. Pædiatrics, use of sulphonamides in, A., III, 206.

Pain, cutaneous and visceral, sensitivity to, in normal subjects, A., III, 330. impulses of, action currents of, in man, A., III,

intractable, treatment of, with cobra venom, A., III, 834.

peripheral unit for, A., III, 339. pleuritic. See under Pleurisy.

Pain, relief of, presacral neurotomy for, A., III, 801.

surgery and, A., III, 20. threshold of, effect of thymoxyethyldiethylamine on, A., III, 59. measurements of, skin resistance changes

and, A., III, 20.

Paints, carbon black and iron-blue, determination in, of pigments, C., 172.

determination in, of pigments, C. flaking, danger of, to calves, A., III, 496. heavy-bodied, flash points of, C., 26.

Paint films, hardness of, determination of, by height of rebound of ball, C., 96. water absorption of, C., 74.

Palæozoology, genera, species, and subspecies in, criteria for, A., III, 517.

Palamneus fulvipes, digestive glands of, A., III, 595.

cleft, due to maternal nutritional Palate, deficiency in rats, A., III, 317.

Palladium, catalysts of, with high polymers, A., I, 109.

equilibrium of, with hydrogen, hysteresis in, A., I, 58.

hydrogenation of acetylene on, A., I, 108. potential of, in hydrochloric and perchloric

acid solutions, A., I, 18. solubility in, of hydrogen, A., I, 81.

surfaces, activation of, by slow discharge, A., I, 162.

use of, in the laboratory, C., 197.

Palladium alloys, with copper, catalytic action of, A., I, 205. Palladium bases, interchange of hydrogen in,

with deuterium oxide, A., I, 19.

Palladium compounds, with hydrazine and hydroxylamine, A., I, 184.

Palladium thiosulphates, A., I, 292.

Chloropalladite ions, stability of, A., I, 18.

Palladium organic compounds : Palladium carbonyl halides, A., I, 292.

Cyanopalladic acid, potassium salt, reduction of, by potassium in liquid ammonia, A., I,

23. Palladium electrodes. See under Cathodes. Pallavicinia, effect of colchicine on, A., III,

380. Palm oil, carotenoids of, A., III, 783.

Palmitaldehyde, derivatives of, C., 117.

Palmitic acid, constitution diagram of, A., I, 17. glycidyl ester, A., II, 90. potassium and sodium salts, electrical con-

ductivity of, in presence of cresols, A., I, 14. sodium salt, crystals, growth of, A., I, 243.

X-ray diffraction by, A., I, 55. structure of, A., I, 30.

N1-Palmitylsulphanilamide, A., II, 365. Palsy, cerebral, congenital, ætiology of, A., III, 332.

Pamaquin, assay of, C., 185.

Pancreas, adenoma of, hypoglycæmia due to, with surgical cure, A., III, 27.

annular, A., III, 710. anti-fatty liver factor of, in insulin-

maintained-depancreatised dogs, A., III, 815. cancer of, islet cell, chemotherapy of, in man,

A., III, 543.

cystic fibrosis of, A., III, 255, 741.

disease and function of, in early life, A., III, 192, 255.

enzyme activity in, analysis of, A., III, 255. enzymes of, effect of dietary composition on, Å., III, 412.

external secretion of, occlusion of, in man, A., III, 34.

fibrosis of, fat and nitrogen metabolism in infants and children with, A., III, 113.

function of, effect of secretion on, in infants and children, A., III, 255.

test for, diagnostic value of, A., III, 474. histology of, and associated tissues of Chinook salmon, A., III, 255.

insufficiency of, after resection of pancreas, A., III, 741.

pathologic changes associated with, in early life, A., III, 657.

Pancreas, insulin content of, effect of adrenotropic hormone on, in rats, A., III, 466.

Langerhans islets in, cancer of, with liver metastasis producing hyperinsulinism, A., III, 807.

injurious action on, of alloxan, A., III, 543. tumour of, A., III, 40.

removal of, fatty liver after, lipocaic and, A., HII. 815.

secretion of, alkali in, A., III, 474. secretion of dyes by, A., III, 346.

senility in, similarity of locule and cavity formation in, in man and rat, A., III, 449. zinc in, in normal and hypophysectomised dogs, A., III, 342.

Pancreatectomy, diabetes after, in rats, A., III, 588.

treatment with, of hypoglycæmia, A., III, 807.

Pancreatic juice, anti-fatty liver factor of, in insulin-maintained-deparcreatised dogs, A., III, 815.

elimination of administered zinc in, measured by its radioactive isotope, in dogs, A., III, 213.

secretion of, effect of bile in intestines on, A., III, 255.

Pancreatin, influence of, on tissue growth, A., III, 192.

Pancreatitis, A., III, 34. interstitial, associated with pneumococcic mural endocarditis, A., III, 741.

Pancreozymin, stimulation by, of pancreatic énzyme secretion in extracts of small intestine, A., III, 34.

intestine, A., I, 184. Panial traps, A., I, 184. See $r-\beta\beta$ -Dimethyl-y-butyrolactone, a-hydroxv-.

Pantopaque. See Phenylundecoic acid, iodo-, ethyl ester.

Pantothenic acid, addition of, to wheat bread, effect of, on absorption, digestion, and evacuation in gastro-intestinal tract in dogs, A., III, 270.

alkali-stable derivative of, in biological materials, A., III, 47. analogues of, A., II, 92, 190.

bee bread and royal jelly as source of, A., III, 354.

calcium salt, effect of, on grey hair in man, A., III, 47.

hydrolysis of, A., I, 157.

content of, in American diet, A., III, 125. in grain sorghums, A., III, 603.

deficiency of, effect of, on growth and alimentary tract in swine, A., III, 487. on resistance to poliomyclitis in mice, A., III, 825.

in dogs, A., III. 673. in rats fed succinyl sulphathiazole in purified diets, A., III, 424.

production of, with pantoyltaurine in mice, A., III, 47.

derivatives of, vitamin activity of, A., III, 200.

determination of, C., 34, 35, 183.

yeast growth method for, C., 84.

effect of, on growth of Eimeria nieschulzi, A., III, 143.

on susceptibility to pneumonia, A., III, 548. with pantoyltaurine, on growth of microorganisms, A., III, 506.

optical antipodes of, A., II. 91.

requirement of, for hens fed heated diet, A., III, 47.

therapeutic action of, A., III, 209.

utilisation of, by rats, role of biotin and "folic acid" in, A., III, 47.

dl-Pantothenic acid, and its quinine salt, synthesis and resolution of, A., II, 36. N-Pantoyl-8-aminoethylthiol, A., II, 92.

Pantoyltaurine, aryl derivatives of, A., II, 190. effect of, on growth of rats, A., III, 424

with pantothenic acid, on growth of microorganisms, A., III, 506.

pantothenic acid deficiency produced by, in mice, A., III, 47.

resistance of bacteria to, A., III, 295.

N-Pantoyltaurine, growth-inhibiting analogues related to, preparation of, A., II, 92.

Papaver somniferum, polyploidy in, colehicineinduced, A., III, 85.

Papaveraldine, formation of, from papaverine, A., II, 280.

Papaverine, oxidation of, to papaveraldine, with selenium dioxide, A., II, 280. Paper, air-permeability of, C., 25.

asphalted, water-resistance of, testing of, C.,

bursting strength of, C., 170.

creasing of, for water-vapour permeability test, C., 72.

curl of, measuring degree of, C., 72.

fibre furnish determination in, microscopically, C., 170.

filter, capillary properties of, applied to analysis, C., 43.

discs of, use of, with crucibles, C., 95. fire-resistant-treated, inflammability of, C., 25.

flame-proofed, inflammability of, C., 171. penetration of, by absorption, C., 122. resins, and their

permeability of, to printing ink, castor oil test for, C., 72.

to water vapour, C., 72. production of, freeness tester for, nomograph for, C., 120.

sampling of, from the reel, apparatus for, C., 120.

sizes for, determination in, of wax, C., 171. sizing of, C., 170.

strength of, measurement of, C., 170. tearing strength of, tests for, C., 71.

tensile breaking strength of, C., 120, 170. Paper board, fire-resistant-treated, mability of, C., 25. inflam-

flame-proofed, inflammability of, C., 171. permeability of, to water vapour, C., 72. tensile breaking strength of, C., 120, 170.

Paper mills, control in, by cupriethylenediamine viscosity method, C., 119.

kraft, analytical control in, C., 170.

Paper pulp, determination in, of pentosans, C.,

fibre dimensions for, apparatus for measuring, C., 169.

production of, laboratory processing in, C.,

Paphia staminea, gonad development and seasonal changes, and sex in, A., III, 109.

Papilla duodeni, histology of, A., III, 625. Papillomas, virus-induced, effect of chemical carcinogens on, in rabbits, A., III, 821. effect of X-rays on cell-virus associations in, in rabbits, A., III, 121.

Papilloma virus, infection with, enhanced, A., III, 821.

protein, properties and purification of, A., III,

recovery of, in rabbits, A., III, 821.

Shope, cells of, glycolytic and respiratory metabolism of, A., III, 819. rabbit, size of, A., III, 481.

Papio hamadryas, folliculosis of conjunctiva in, Å., III, 801.

Paprika, vitamin-C in, A., III, 271.

adrenal-pituitary interrelation Parabiosis, demonstrated by, A., III, 590.

rat, cancer in, constitutional factors of, A., III, 121.

Parachors, A., I, 214. organic, A., I, 214; C., 197.

Paradentosis, experimental, A., III, 259. Paraffins, alkylation of, with olefines, A., II, 1.

critical solution temperatures of, with \$\beta \beta'-\text{dichloroethyl} ether and nitrobenzene,} A., I, 244.

normal, physical data of, A., II, 177. viscosity of solutions of, A., I, 56. See also Hydrocarbons, paraffin.

Paraffins, nitro-, mixed, analysis of, C., 45. Paraffin wax, electrophoresis of, A., I, 15. treatment with, of burns, A., III, 215.

Paragneiss, nephelinised, Bancroft region, Ontario, A., I, 24.

Paraldehyde, administration of, to guinea-pigs, A., III, 496.

concentration of, in blood, after administration during labour, A., III, 554.

determination of, in blood, expired air, and tissues, C., 140.

intramuscular injection of, sciatic nerve injury from, A., III, 211. metabolism of. See under Metabolism.

studies on, A., III, 361.

toxicity of, intravenously injected, A., III, 61.

Paraldol, constitution of, A., II, 183. Paralysis, from tick bite, A., III, 177.

sodium and psychotherapy, A., III, 331. fantile. See Policopulities hysterical, treatment of, with

infantile. See Poliomyelitis. muscle, erythroidine-induced, effect of, on electro-encephalogram, A., III, 102.

See also Palsy. Paramecium, characters in, determination and

inheritance of, A., III, 519. ciliary activity in, effect of chemicals on, A.,

III, 434. effect on, of propionic acid and sodium propionate, A., III, 434.

sexual isolation and mating types in, A., III,

Paramecium caudatum, as test animal for organic arsenicals, A., III, 361.

effect on, of chemicals, A., III, 503. of colchicine and X-rays, A., III, 842. Parasites, animal, migration and localisation of,

within the host, A., III, 159. bstance in, related t substance isoagglutinogens, A., III, 715.

malarial, sporulation in, A., III, 770. staining of, with eosin-azure-methylene-blue, A., III, 161.

Parathyroids, cancer of, with osteitis fibrosa

cystica, A., III, 729. fect on, of D-hypervitaminosis, effect nephrectomy, and pregnancy, in rats, A., III, 652.

function of, in hypophysectomised rat, A., III,

grafts of, intravascular, A., III, 250.

hormones of, action site of, in normal and nephrectomised rats, A., III, 339. activity of, in nephrectomised rat, A., III, 339.

in trichinosis, A., III, 465. volume of, effect of hypervitaminosis-D. nephrectomy, and pregnancy on, A., III, 250.

Parathyroid extract, effect of, on labelled phosphorus distribution, excretion, retention, A., III, 729.

Parathyroidectomy, decreased appetite in rats after, A., III, 339. phosphorus

Paratyphoid fever, carriers of, treatment of, with sulphaguanidine, A., III, 55. immunisation against, A., III, 373.

Paratyphoid fever B, bacilli. See under Bacilli.

outbreak of, phage typing in, A., III, 78.

Paredrine, suspensions of, with sulphathiazole, sensitivity to, A., III, 57. toxicity of, A., III, 208.

treatment with, of shock, A., III, 28. Paregoric, expectorant action of, A., III,

494. Paresis, after lateral corticospinal section in monkeys, A., III, 179.

spastic, familial, with strabismus, A., III, 644.

Parkerite, A., I, 92.

Partheniol, isolation of, from guayule resin, and its formate, A., II, 269.

Parthenium argentatum, constituents of, A., II,

Parthenocarpy induced by stimulation of ovule development, A., III, 782.

Particles, absorbing, impact of, with wave-packets, A., I, 190. counting of, C., 46. cylindrical, charged, electrical energy of, A., I,

elementary, spin of, A., I, 27.

Particles, elementary, theory of, A., I, 2. heating of, in ultra-short-wave condenser field, A., I, 192. high-energy, in Auger showers, A., I, 263. impulse-energy tensor of, A., I, 235. nuclear, physical meaning and symmetry of system of, A., I, 264. reflecting, impact of, with wave-packets, A., I, 190. " self-field " of, A., I, 264. size analysis of, microscope in, C., 54. spin 3, 2, theory of, A., I, 163. ultramicroscopic, form and size of, A., I, 143. a-Particles. See a-Rays. Partridgeite, A., I, 92, 260. Parturition, in kangaroos, A., III, 571. in mares, A., III, 191. Passivity, theory of, A., I, 105. Pastes, alimentary, analysis of, microchemically, C., 30. Pasteur effect, mechanism of, A., III, 367. Pasteurella pestis, avirulent strains of, A., III, 300. avirulent and virulent, behaviour of, in animals, A., III, 563. infections by, treatment of, in mice, A., III, metabolism and nutrition of, A., III, 75. Pasteurella septica, from appendicular abscess, A., III, 846. wound infection with, after cat- and dog-bites, A., III, 847. Patella, index of, in mammals, A., III, 517. Pathology, developmental, A., III, 627. mounting specimens in, C., 141. Patulin, inhibition by, of growth of Pythium, A., III, 219. Pavements, determination in, of bitumen, C., Paws, reflex vaso-motor responses of, in cats, A., III, 170. Peas, blue boiler. See Pisum sativum. cow, ascorbic acid and dry matter in, A., III, 154. field, as source of protein for growth, A., III, 124. fresh and frozen, thiamin content of, before and after cooking, A., III, 126. germinated, production of vitamins in, A., III, Pea plants, cow, ascorbic acid in, A., III, 312, 379. embryo, growth of, effect of nicotinic acid on, A., III, 314. leaves, proteolytic enzymes in, effect of potassium on, A., III, 440. roots, nicotinic acid as growth factor for, A., III, 87. stems, test for auxin in, A., III, 855. transplantation of, A., III, 853. Peaches, polyploidy in, induced by colchicine, A., III, 231. yellow, carotenoids of, A., III, 624. Peach trees, bud-opening of, effect of chemicals on, A., III, 231. roots, potassium translocation in, A., III, 780. Peanuts. See Arachis hypogæa. Peanut flour, protein nutritional value of, and its value as supplement to wheat flour, A., III, 749. Peanut oil. See Arachis oil. Pears, Bosc, composition, maturity, and storage of, effect on, of water deficiency in trees, A., III, 440. ripening of, effect of ethylene on, A., III, 314.

on, A., III, 231.

ation from, A., II, 302.

deposition, C., 82.

A., III, 71.

sodium salt, as agar substitute in bacteriology,

III, 623.

Pear trees, bud-opening of, effect of chemicals Pecan nuts, constituents of, during growth, A., Pecan trees, leaves, photosynthesis and transpiration of, A., III, 380. culture of, A., III, 502. determination of, C., 35, 85, 184. Pechmann condensation, of ethyl acetoacetate with 2-chloro-m-5-xylenol, chromone formdistribution of, in eyes, A., III, 803. effect of, on infections of egg embryos, A., III, Pectic acid, determination of, by electro-843.

Pectin, administration of, in patients not in shock, A., III, 11. commercial, determination in, of grade, C., determination of, in biological materials, A., III, 348; C., 83. effect of, on survival time of dogs in hæmorrhagic hypotension, A., III, 720. gels, strength and viscosity of, A., I, 174. in plant materials, A., III, 316. oxidative degradation of, in aqueous solution, viscosimetric determination of, A., II, 116. prevention with, of shock, A., III, 798. soluble, determination of, by electrodeposition, C., 82. solution of, use of, in shock, A., III, 173. treatment with, of shock, A., III, 798. viscosity of solutions of, A., I, 279. Zeisel methoxyl values of, C., 181. Pediculosis capitis, treatment of, A., III, 279. Pediculus humanus, skin reactions to, A., III, Pegmatite, andalusite in, from California, A., I, 136. crystallisation of, A., I, 136. granite, genesis of, A., I, 92. rare elements in, C., 114. prospecting for, A., I, 160. Pelargonic acid, diamino-, resynthesis from, of dethiobiotin, A., II, 382. Pellagra, adult and infant, in South African Bantu, A., III, 354. bone chemistry in, A., III, 270. in psychosis, A., III, 331. secondary, A., III, 603. urinary pigments in, A., III, 269. Pelvimetry, precision method of, A., III, 1. X-ray, A., III, 785. Pelvis, cancer of, spread of, role of Fallopian tubes in, A., III, 821. diameter of, and fœtus, X-ray, estimate of, A., III, 317. female and male, formation ætiology of, studied in children, A., III, 785. fracture of, in bovines implanted with œstrogen tablets, A., III, 739. ganglioneuroma of, A., III, 600. ligaments of, relaxation of, induced by progesterone in castrate hysterectomised guinea-pigs, A., III, 345. Naegele, A., III, 785. associated with rudimentary femur, A., III, 626. nerve tumours of, A., III, 246. Penatin, properties of, A., III, 141. properties and purification of, A., III, 141. Penetrometers, flow properties determined by, C., 56. micro-, C., 121. Penicidin, activity of, suppressors of, A., III, Penicillin, A., III, 53, 88, 678, 843; C., 135. absorption of, from stomach, A., III, 427. action of, on Treponema pallidum, A., III, 606. administration of, systemic, A., III, 679. analysis of, C., 135. antibacterial effect of, on Staphylococcus aureus and streptococci, A., III, 300. antibacterial and eytotoxic activity of, A., III, 131. application of, in soft-tissue lesions, A., III, 678. calcium salt, toxicity of, A., III, 491. cream, A., III, 828. crude, antibacterial properties of, A., III, concentration and preservation of, A., III, filtrate, treatment with, locally, A., III, 679.

effectiveness of, on Listerella, A., III, 550.

chemotherapeutic effect of, A., III, 131.

esters, A., III, 141.

in surgical infections, A., III, 827. inhibition of, turbidimetry of, A., III, 219. microbiology of, A., III, 53; C., 135. preparation of, A., III, 292. production of, A., III, 141, 692. large-scale, A., III, 502. resistance to, development of, by pneumococci, A., III, 53. of pneumo-, staphylo- and strepto-cocci, A., III, 76. salts, toxicity of, A., III, 678. susceptibility to, in relation to concentration, A., III, 678. synergism of p-aminobenzoic acid and sulphapyridine with, A., III, 843. therapeutic action of, on Spirillum minus and Spirochæta recurrentis in mice, A., III, 551. toxicity of, prepared for clinical use, A., III, treatment with, in battle casualties, A., III, 679. in mandibular infection, A., III, 679. in otolaryngology, A., III, 805. in septicæmia, A., III, 276, 827 laboratory control of, A., III, 678. of bone infections, A., III, 679. of breast abscess, A., III, 678. of Clostridium welchii infection, A., III, 53, 829.of gonorrhea, in man, A., III, 358. sulphonamide-resistant, A., III, 207. of Gradenigo syndrome complicated with meningitis, A., III, 249. of infectious polyarthritis in rats, A., III, 756. of meningitis, A., III, 827. of murine typhus infection in mice, A., III, of ocular infections, A., III, 649. of skin diseases, A., III, 678. of syphilis, A., III, 358. use of, in media for isolation of Hamophilus influenzæ, A., III, 372. Penicillin B, properties of, A., III, 141. Penicillinase, formation of, by subtilis group organisms, A., III, 843. Penicillium expansum, patulin from, A., III, 219.
Penicillium glaucum, formation by, of methyl ketones from unsaturated acids, A., III, 290. janthinellum, Penicillium notatum, spinulosum, antibiotics from, A., III, 692. Penicillium notatum, growth of, A., III, 69. heterokaryosis in, A., III, 841. penatin from, A., III, 141. penicillin formation by, A., III, 291, 692. Penicillium patulum, gentisyl alcohol from, A., III, 290. patulin from, A., III, 219. Penicillium roqueforti, growth of, and enzymic activity, A., III, 613.

Penicillium sclerotiorum, metabolism of, effect of sodium nitrate concentration on, A., III, 502. Penis, anomaly of, associated with imperforate anus, A., III, 317. erection of, in castrate men with low titres of urinary androgens, A., III, 411. lesions of, dark-field diagnosis of, A., III, 505. Pennaria tiarella, nematocysts of, manipulation of, by Aeolis pilata, A., III, 237. Pennisetum clandestinum, leaves, metabolism and respiration of, A., III, 623. Pennyroyal oil, 2:4:4-trimethylcyclopentanone in, A., II, 136. Pentacene, synthesis of, A., II, 19. Pentaerythrityl bromide, debromination of, by zinc, A., II, 292. Pentakispyridine rhodous halides, A., II, 377. 2:4:6:2':5'-Pentamethylbenzophenone, A., II, 298. N-Pentamethylene-N'N'-dimethylsulphamide, 6:6-Pentamethylenefulvene, reaction of, with

maleic anhydride, A., II, 260.

dione, A., II, 382.

5:5-Pentamethylene-3-methyloxazolidine-2:4-

Penicillin, excretion of, in bile, A., III, 358.

in man, A., III, 53.

- 5:5-Pentamethyleneoxazolidine-2:4-dione, A., II, 382.
- 1:2:4:5:8-Pentamethylnaphthalene, additive compound of, with s-trinitrobenzene, A., II, 125.
- 1:2:4:6:8-Pentamethylnaphthalene, compound of, with s-trinitrobenzene, A., II, 126.
- 1:2:4:6:8-Pentamethyl-1:2:3:4-tetrahydro-naphthalene, A., II, 126.
- 3:5:3':5':3"-Pentamethyltri-2-pyrrylmethane-4:4':4"-tricarboxylic acid, triethyl ester, A., II, 351.
- 3:5:3'.5':4"-Pentamethyltri-2-pyrrylmethane-4:4':3"-tricarboxylic acid, and 5"-bromo-triethyl esters, A., II, 351.
- Pentanes, β -halogeno-, optically-active, A., II,
- n-Pentane, viscosity of, A., I, 80.
- isoPentane, thermal properties of, A., I, 31. tsoPentane, βγ-dibromo-, hydrolysis of, A., II, 285.
- cycloPentane, thermal decomposition of, A., I, 204.
- spiroPentane, A., II, 215.
- Pentane-aα-dicarboxylic acid, α-bromo-ε-cyano-, A., II, 305.
- cycloPentane-1:3-diones, A., II, 227.
- cycloPentanespiro-1:2'-cyclopentanone, carbazone of, A., II, 194.
- Pentane-ayye-tetracarboxylic acid, tetraethyl ester, A., II, 259.
- cycloPentanethiocarboxylic acid, A., II, 154. n-Pentane-aas-tricarboxylic acid, and its triethyl
- ester, and a-bromo-, A., II, 305. n-Pentane-aay-tricarboxylic acid, and its diethyl
- ester, A., II, 353. Pentan-β-ol, α- and γ-nitro-, α-naphthyl-
- urethanes of, A., II, 247. Pentan-γ-ol, β-nitro-, α-naphthylurethane of, A.,
- II, 247.
- cycloPentanones, substituted, preparation of, A., II, 225.
- :1:2:5:6-Pentaphenylindene, and its lactone, A., II, 124.
- 1:1:3:5:6-Pentaphenylindene, A., II, 124.
- 1:2:3:4:5-Pentaphenylpyrrole, A., II, 56. Pentathionic acid. See under Sulphur.
- cycloPentene, vibrational frequencies of, A., I, 265.
- Δβ-Penten-α-ol, properties of, A., II, 317. cycloPentenones, preparation of, from lactones, A., II, 162.
- $\Delta\beta$ -Pentenonitrile, A., II, 250.
- Δ^2 -cycloPentenophenyl- β -phenylethylacetonitrile, A., II, 272.
- 5-Δ'-cyc oPentenyl-5-allylbarbituric acid, A., II, 144.
- toxicity of, A., III, 555.
- 5-△2-cycloPentenyl-5-allylthiobarbituric acid, A., II, 144.
- $5-\Delta^2$ -cycloPentenyl- $5-\beta$ -bromoallylbarbituric acid, A., II, 144.
- $5-\Delta^2$ -cycloPentenyl- $5-\beta$ -bromoallylthiobarbituric acid. A., II, 144.
- 5-Δ2-cycloPentenyl-5-isobutylbarbituric acid, A., II, 144.
- 5-22-cycloPentenyl-5-isobutylthiobarbituric acid, A., ĬI, 144.
- ω-Δ2-cycloPentenyl-ωω-dimethylacetophenone, A., ĬI, 272.
- 5-A²-cycloPentenyl-1:5-dimethylbarbituric acid, A., II, 144.
- 3-42*-cycloPentenyldicyclopentyl, A., II, 187. 5-∆2-cycloPentenyl-5-ethylthiobarbituric acid, A., ĬI, 144.
- ω - Δ^2 -cycloPentenyl- ω -methylacetophenone, A., II, 272.
- 5-Δ2-cycloPentenyl-5-β-methylallylbarbiturio acid, A., II, 144.
- $5-\Delta^2$ -cycloPentenyl- $5-\beta$ -methylallylthiobarbituric acid, A., II, 144.
- ω-42-cycloPentenyl-ω-methyl-ω-benzylacetophenone, A., II, 272.
- $\delta \Delta^1 cyclo$ Pentenyl- β -methyl- Δ^{α} -buten- Δ^{γ} -mene, A., II, 101.
- ω-Δ2-cycloPentenyl-ω-methyl-ω-ethylacetophenone, A., II, 272.

- 5-42-cycloPentenyl-1-methyl-5-ethylbarbituric acid, A., II, 144.
- Δ²-cycloPentenylphenylacetonitrile, A., II, 272. β - Δ -cycloPentenyl- γ -phenylpropane, A., II, 272. 5-∆2-cycloPentenyl-5-propenylbarbituric A., II, 144.
- 5-42-cycloPentenyl-5-isopropènylbarbituric acid, A., II, 144.
- 5-∆2-cycloPentenyl-5-isopropenylthiobarbituric acid, A., II, 144.
- 5-∆2-cycloPentenyl-5-n-propylbarbituric A., II, 144.
- Pentlandite, crystallisation of, A., I, 177. Pentobarbital sodium, effect of, on fœtus, A., III,
 - 280. on uterus, A., III, 811.
 - sleep produced by, duration of, in normal and
- castrate cats, A., III, 495. tolerance to, effects of age, castration, parturition, and sex on, in rats, A., III, 682.
- Pentosans, determination of, C., 192. in cellulose, C., 71.
 - in paper pulp, C., 24.
- with hydrobromic acid, C., 91. Pentoses, determination of, C., 192.
- with hydrobromic acid, C., 91.
- Pentothal sodium, administration of, histopathological changes in rats after, A., III, 607.
- anæsthesia with. See under Anæsthesia. circulatory effects from, after hæmorrhage, A., III, 58.
- dosage-mortality ratio of, after toxic doses of sulphanilamide, A., III, 830.
- effect of, on fœtus, A., III, 280.
- treatment with, of hysterical paralysis, A., III, 331.
- cycloPentylbenzene, homologues of, and their hydrogenation products, A., II, 123.
- N-p-cycloPentylbenzylethylenediamine, A., II,
- cycloPentyl-β-cyanoethylmalonic acid, diethyl ester. See a-Carbethoxy-a-cyclopentyl-n-
- butyric acid, y-cyano-, ethyl ester. cycloPentyl-p-cymene, A., II, 123. 1-β-cycloPentylethylcyclopentane-1-carboxylic
- acid, and its silver salt, A., II, 193. β-cycloPentylglutardiamide, αα'-dicyano-, A., II,
- 307. a-cycloPentylglutaric acid, and its derivatives, A., II, 306.
- β-cycloPentylglutaric acid, A., II, 307. cycloPentylideneacetic-2-β-acrylic acid, A., II,
- 75. 3:3'-n- and-iso-Pentylidenebis-4-hydroxy-
- commarins, and their dimethyl ethers, A., II, 166.
- cycloPentylmesitylene, A., II, 123. cycloPentyl-1-methyl-4-tsopropylcyclohexane, A.,
- II, 123. cycloPentylisopropylbenzene, A., II, 123.
- 2-cycloPentylpyridine, picrate, A., II, 306. 3-cycloPentylpyridine, 2:5:6-trichloro-, A., II,
- 3- and 4-cycloPentylpyridines, and their derivatives, A., II, 306.
- 2-cycloPentylthiolcyclohexanol, A., II, 335.
- cycloPentyltoluene, A., II, 123.
- 2-cycloPentyl-1:3:5-trimethylcyclohexane, A., II,
- cycloPentyl-p-xylene, A., II, 123.
- Pepsin, action of, on antidiphtheria serum, A., III, 507.
 - combination of, with casein, potato virus X, and tobacco mosaic virus, A., III, 690. specificity of, effect of acetylation on, A., III,
- 140.
- Peptic ulcers. See under Ulcers. Peptidases, A., III, 66, 287, 499, 767.
 - animal, A., III, 366, 499, 766. blood-serum, A., III, 499.
 - hydrolysis by, of d-leucylglycine, A., III, 366.
 - intestinal mucosa, A., III, 689. liver, A., III, 217.
- d-Peptidase, A., III, 66. in plants, A., III, 690. occurrence of, A., III, 287.

- d-Peptidase, specificity of, in normal and cancerous sera, A., III, 767.
 Peptides, A., II, 35; C., 191.
 - anhydrides of, A., II, 99.
 - carbamic acid type, A., II, 36.
 - mixed, separation of, C., 24. precipitation of, with aromatic sulphonic acids, A., II, 356.
- d-Peptides, fission of, by enzymes, A., III, 767.
- Peptones, bacterial preparation and properties of, A., III, 294.
- culture of bacteria with, A., III, 616.
- hydrolysis of, catalytic effect of metal ions on, A., ĬI, 88.
- See 4-Pyridone-N-acetic acid, Perabrodil. 3:5-diiodo-.
- Perbenzoic acid, use of, oxidation of ethylene
- derivatives, A., II, 159.

 Perchloric acid. See under Chlorine.

 Perchromic acid. See under Chromium.
- Perfusion apparatus, C., 51.
- Perhydroanthracenes, A., II, 254. Periarteritis nodosa, diagnosis of, A., III, 243. disseminated necrotising vascularitis as toxic
- origin of, A., III, 243.
- lesions similar to those of, produced by deoxycorticosterone, A., III, 14. Pericardial disease, A., III, 456.
 - dissection of cava funnel region in cases of, A., III, 14.
- Pericardiectomy, pericarditis cured by, A., III, 639.
- Pericarditis, constrictive, cured by peri-
- cardiectomy, A., III, 639. Pericardium, apical adhesion of, resembling reptilian gubernaculum cordis, A., III, 626.
- Periaermium, gall-forming, on northern hard pines, A., III, 855.
- Perinaphthindenone bromide, A., II, 103.
- Periodic system, A., I, 115. representation of, A., I, 188.
- spiral form of, A., I, 209. Perionyx sansibaricus, regenerative capacity in,
- A., ĬII, 628. Periplaneta americana, action on, of pyrethrum,
- A., III, 496. Malpighian system of, interaction and storage
- of water soluble vitamins in, A., III, 125. Peritoneal cavity, drainage of particulate matter
- from, by lymphatics, A., III, 625. Peritoneoscopy, A., III, 412, 742.
- Peritoneum, chemotherapy of, A., III, 207.
- Peritonitis, purulent, treatment of, sulphonamides, A., III, 207. treatment of, A., III, 73.
 Perloline, A., II, 113.
- metabolism, photodynamic toxicity of, A., III, 282. action,
- spectrum of, absorption, A., I, 116.
- Permanganates. See under Manganese. Permeability, of living membranes, A., III, 687.

and

- of membranes and plant cells to water, A., III, 704.
- Permutoids, A., I, 82. Pernitrous acid. See under Nitrogen.
- Peromyscus, body proportions in mature mice of genus, A., III, 159.
- Perosis, due to synthetic manganese-deficient diet, tracer study with radio-manganese on chicks with, A., III, 421.
- prevention of, in turkey poults, A., III, 271.
- Perowskite, structure of, A., I, 79. Peroxidase, activity of, A., III, 139.
 - effect of cyanide on, A., III, 286. citrus, distribution and preparation of, A., III,
- 856. determination of, in vegetable extracts, C.,
- 181. with pyrogallol, C., 87. enzyme-substrate reaction of, A., III, 284.
- heat-inactivated, regeneration of, A., III, 839. horseradish, crystalline, preparation and properties of, A., III, 139.
 - magnetic properties of, and its derivatives, A., III, 138. horseradish, milkweed, and turnip, com-
- parison of, A., III, 139. milk, purified, A., III, 689.

See 3:3-Diethyltetrahydropyridine, Persedon. 2:4-dihydroxy-.

Pertussis, antitoxin, A., III, 563.

chest roentgenograms during, A., III, 722. toxin, and its neutralisation by antitoxin, A., III. 563.

treatment of, with adrenal cortex extracts and vaccines, A., III, 75.

vaccine, effectiveness of, A., III, 300.

See also Whooping-cough.

Pervitine, action of, on nervous system, A., III, 429.

Perylene, and its derivatives, A., II, 94, 104, 190. Perylene, tetrabromo-, A., II, 94.

Pests, control of, with polynitro-compounds, C., 138.

Petals. See under Flowers.

Pethidine. See Demerol.

Petit mal, treatment of, with dl-glutamic acid hydrochloride, A., III, 725.

Petrol, analysis of, by Raman spectra, C., 68. detection in, of lead tetraethyl, C., 158. determination in, of lead tetraethyl, C., 69. heat of combustion of, C., 115. vapour, toxicity of, A., III, 762.

Petroleum, analysis of, by radiation spectrography, C., 115.

colour measurements of, C., 18.

distillates, determination in, of sulphur compounds, C., 110.

nitrogen compounds in, A., II, 306.

fractions, analysis of, by furfuraldehyde solution temperatures, C., 166.

refining of, analysis of gas samples from, with mass spectrometer, C., 115.

Petroleum industry, spectrochemical analysis in, C., 199.

Petroleum oils, constitution of, C., 115.

Petroleum products, determination in, of thiolsulphur, C., 20.

Pettenkofer reaction, applied to steroids, A., II,

Petunia, flowers, colour and doubleness in, A., III, 229.

Petunia axillaris, seed germination in, colchicinestimulated, A., III, 381.

Phæochromocytoma, causing paroxysmal hypertension, adrenalectomy for, A., III, 808.

Pheophytin d, A., II, 85.

tsoPhæophytin d, A., II, 85. Phagocytosis, effect on, of sulphonamides, A., III, 427.

Pharmaceutical preparations, determination in,

of nicotinamide, C., 183. Pharmacology, A., III, 684. advances in, A., III, 283.

Pharyngitis, streptococcal, bacteriostatic properties in, blood in, A., III, 619. epidemiology of, A., III, 618.

Phases, formation of, A., I, 17. transformations of, kinetic curves of, A., I,

Phaseolus mungo, seeds, glucose-dehydrogenase from, A., III, 285.

Phaseolus radiatus, seeds, glucose-dehydrogenase from, A., III, 285.

Phaseolus vulgaris, X-ray dosage of, A., III, 84. seeds, constituents of coats of, A., III, 383.

sterols from, A., III, 624. Pheasants, ring-necked, body weight and organ measurement of, in relation to age and

scason, A., III, 710. bursa of Fabricius and pelvis of, influence of sex hormones on, A., III, 736. four-legged, A., III, 626.

testicle development in, A., III, 786. Phemerol, as skin antiseptic, clinical and bacteriological study of, A., III, 553.

Phenacyl bromide, p-bromo-, reaction of, with chloride ions, A., II, 102. chloride, p-bromo-, A., II, 102.

Phenacylacetoacetie acid, and its ethyl ester, di(ethylene ketals) of, A., II, 34.

p-Phenacylaminobenzoic acid, p-3':4'-dthydroxy-, and its esters, and their derivatives, A., II,

4-Phenacylcoumarino-4':3'-2:3-benz-4-pyrone, A., II, 345.

 α -Phenacyl- β -phenylpropionic acid, A., II, 93. 5:6:9':10'-Phenanthraphenazine, 1:2:4-trichloro-, dichloroamino-derivatives, and 1:2:4-trichloro-3-amino-, A., II, 43.

Phenanthraquinone, reactions of, with ethylene, A., II, 346.

Phenanthrenes, from unsymmetrical ketones, A., II. 363.

Phenanthrene-9-carboxylio acid, β -diethylamino-ethyl ester, hydrochloride, A., II, 16.

Phenanthridinium compound (No. 897), treatment with, of Trypanosoma congolense infected Zebu cattle, A., III, 211.

9-Phenanthroic acid, 2:4-dichloro-1-phenyl and cthyl esters, A., II, 100.

1:10-Phenanthroline, derivatives of, A., II, 275. 1-10-Phenanthroline, 5-bromo-, A., II, 276.

Phenanthroxazine, A., II, 85. a-2-Phenanthrylisobutyl alcohol, and its deriv-

atives, A., II, 11. 5-2'-Phenanthryl-1:3-N-dimethyl-5-ethylhydantoin, A., II, 348.

β-2-Phenanthrylisohexoic acid, A., II, 11. 2-9'-Phenanthrylmethoxybenzoic acid,

3:5-dichloro-, methyl ester, A., II, 100. 5-2'-Phenanthryl-3-N-methyl-5-ethylhydantoin, A., II, 348.

β-2-Phenanthryl-n-valeric acid, A., II, 11. Phenarsine, dichloro-, hydrochloride, status of, A., III, 835.

N-o-Phenetyl-N-ethylcarbamide, 5-bromo-, A., II, 255.

p-Phenetylsulphamic acid, sodium salt, A., II, 158.

p-Phenetyl-p-tolylazoxysulphone, A., II, 331. Pheniodol, as contrast medium for cholecysto-

graphy, A., III, 257. Phenobarbital, treatment with, of epilepsy, metabolism during, A., III, 645.

Phenol, A., III, 550.

action of, on Bacillus coli, A., III, 505. adsorption of, by activated carbon, A., I, 277.

condensation of, with formaldehyde, A., I, 106.

detection of, C., 70.

determination of, in air, C., 22. photocolorimetrically, C., 22.

ethers, cleavage of, by pyridine hydrochloride, A., II, 217.

 β -d-lactoside, and its hepta-acetate, A., II, 7. light scattering by aqueous mixtures of, A., I, 275.

metabolism of. See under Metabolism. p-nitrobenzoate, A., II, 294.

oxidation of, by tyrosinase, A., III, 764. toxicity of, for experimental animals, A., III, 552.

tyrosinase activity towards, A., III, 764. urinary exerction of, effect of cocaine on, A., III, 555.

Phenol, o- and p-chloro-, and o- and p-nitro-, dielectric constants of, A., I, 79.

2:6-dichloro-, esters, Fries reaction with, A., II, 127.

pentachloro-, crystal growth of, on crystal faces, A., I, 99. fate of, in animal organism, A., III, 357.

2:4-dinitro-, effect of, on wound healing, A., III, 818.

toxicity of, effect of environmental temperature on, A., III, 214.

o-p'-nitroamino-, o-benzoyl derivative, and its p-nitrobenzoate, A., II, 368.

Phenols, alkylated, phenylcarbamyl derivatives of, m.p. and X-ray powder diffraction data for, A., II, 256.

antiprotozoal activity of, A., III, 220.

colour reactions of, C., 22. condensation of, with αβ-unsaturate aldehydes, A., II, 80. determination of, electrometrically, C., 168. aβ-unsaturated

in blood, C., 28. formation of, from non-phenolic aromatic aldehydes, by action of hydrogen peroxide, A., IĬ, 44.

nuclear methylation of, A., II, 332. phosphoric acid esters of, A., II, 159. Phenols, reaction of, with tert.-butyl chloride, A., II, 256.

surface tension of, and of their mixtures with organic bases, A., I, 246.

Phenols, chloro-, determination of, in body fluids and tissues, C., 42.

halogeno-, fate of, in the organism, A., III, 131.

m-halogeno-, coupling of, resonance theory for, A., II, 97.

nitro-, spectra of, absorption, A., I, 164. Phenol sulphur esterase. See under Esterase.

Phenolic esters, preparation of, A., II, 101, 217. Phenol-1:2-naphthalein, and its derivatives, A.,

II, 222.

Phenolphthalein, alkaline solutions of, fading of, A., II, 135.

determination of, in emulsions, C., 37. phosphate, preparation of, A., III, 68.

Phenolsulphonephthalein, tetraiodo-, alkaline fading of, A., I, 211.

Phenol-p-sulphonic acid, basic copper salt, A., I, 183.

dissociation constant of, A., I, 103.

lanthanum, neodymium, praseodymium, and samarium salts, A., I, 182.

potassium salt, determination of, and its absorption spectrum, A., I, 96.

its pH range, and ultra-violet absorption spectrum, C., 70.

pH of buffer solutions of, effect of sodium chloride on, A., I, 225.

Phenolsulphonic acids, pH of acid-salt mixtures of, A., I, 127.

Phenothiazine, as anthelmintic, A., III, 210, 681, 759.

derivative of, A., II, 353.

metalation of, A., II, 314.

poisoning by. See under Poisoning. treatment with, internally, of animals to prevent horn-fly larvæ development in manure, A., III, 494.

of hæmonchosis outbreaks, A., III, 134. of intestinal helminthic infestations in man, A., III, 280.

of nematode infections in man, A., III, 134. Phenothiazine-1-carboxylic acid, A., II, 314. Phenoxyacetic acid, dissociation constant of, and

of its derivatives, A., I, 17. Phenoxyacetic acid, 2:6-dichloro-, and its ethyl ester, A., II, 128.

Phenoxyacetic acids, substituted, effect of, on plant growth, A., III, 87. 3-Phenoxybenzaldehyde, 4-hydroxy-, and its

oxazolone, A., II, 16.

2-Phenoxybenzoic acid, 4-hydroxy-, A., II, 16. 3-Phenoxybenzoic acid, 4-hydroxy-, A., II, 16. 4-Phenoxybenzoic acid, 2-hydroxy-, A., II, 16.

p-Phenoxy-αa-dimethylpropiophenone, and its 2:4-dinitrophenylhydrazone, A., II, 128.

a-Phenoxy-η-ethoxy-γ-methylheptane, δ-amino-, A., II, 280. a-Phenoxy-η-ethoxy-y-methylheptan-δ-one, and

its oxime, A., II, 280. β-Phenoxyethyl p-toluenesulphonate, A., II, 293.

3-Phenoxy-4-methoxybenzaldehyde, and its semicarbazone, A., II, 16.

9-Phenoxymethylphenanthrene, 9-2':4'-dichloro-, A., II, 100.

 $N-\gamma$ -Phenoxypropyl- β -ammosthylaniline, 2:4-dinitro-, hydrochloride, A., II, 56.

m-Phenoxytyrosine, A., II, 16. δ-Phenoxyvaleric acid, α-amino-, and α-cyano-, and their derivatives, A., II, 91.

Phenyl alkyl others, p-nitro-, A., II, 14.

n-decyl ether, o-amino-, and its derivatives, A., II, 98. n-dodecyl ethers, o-, and p-amino-, and

o- and p-nitro-, and their derivatives, A., esters, Reformatsky reaction with, A., II, 162.

ethers, action on, of aluminium chloride, A., II, 294. ethers, amino-, quaternary salts of, A., II, 98.

groups, 1:3-rearrangement of, A., II, 163. 4-hydroxy- and 4-methoxy-m-tolyl ethers, A.

ĬĬ, 16.

Phenyl methyl ether, sulphur dioxide compound of, A., I, 16.

sulphate, p-bromoaniline salt, A., II, 256. sulphate, p-bromo-, p-bromoaniline salt, A., II, 256.

Phenylacetaldehyde, and 2-bromo-, and their derivatives, A., II, 360.

Phenylacetchloroamide, A., II, 365.

Phenylacethydrazide, 2:4-dinitro-, A., II, 315. Phenylacetic acid, 2:6-dichloro-1-phenyl ester, A., II, 128.

dissociation constant of, in aqueous acetone and aqueous sucrose, A., I, 281.

Phenylacetic acid, 2:5-dibromo-3:6-dihydroxy-, ethyl ester, A., II, 346.

a-amino-a-oa-Phenylacetic acid, -a-p-chloro- and -a-o-hydroxy-, A., II, 161.

Phenylacet-\$\beta\$-3:4-methylenedioxyphenylethylamide, o-nitro-, A., II, 383.

y-Phenylacetoacetic acid, y-4-nitro-, and its ethyl ester, A., II, 130.

a-Phenylacetone, aa-dichloro-, a-thiocyano-a-chloro-, and a-thiol-, and its derivatives, A., II, 372.

acid. and its a-Phenylacetone-a-sulphonic benzylthiuronium and sodium salts, A., II,

Phenylacetophenone, mixed crystal formation by, A., I, 177.

2-Phenylacetoxybenzoic acid, 5-bromo-, methyl ester, A., II, 303.

2-Phenyl-4-acetoxymethylthiazole, A., II, 62.

1-Phenylacetyl-4-p-anisylmethylpiperazine hydrochloride, A., II, 235.

1-Phenylacetyl-p-chlorobenzylpiperazine hydrochloride, A., II, 235.

Phenylacetyldeoxybenzoin, A., II, 297.

Phenylacetylphenylacetylpropionic acid, ethyl ester, A., II, 297.

 β -p-Phenylacetylphenylpropionic acid, A., II, 297.

β-p-Phenylacetylphenylpropionitrile, A., II, 298. B-Phenyl-a-acetylpropionic acid, ethylene ketal of, A., II, 34.

β-Phenylacrylophenone, 2:2'-dihydroxy-, and its dibenzoate, A., II, 345.

Phenylalanine, metabolism of. See under Metabolism.

oxidation of, A., II, 369.

phenylcarbamyl derivative of, A., II, 91. hydroxyphenyl compound I-Phenylalanine.

from, incubated with liver slices, A., III, 474. (-)-Phenylalkylcarbinols, reaction of, hydrogen bromide, A., II, 218. with

2-Phenyl-4-alkyloxazol-5-ones, 2-p-nitro-, A., II, 279.

1-Phenyl-2-alkylcyclopropanes, action on, of sulphuric acid, A., II, 214.

γ-Phenyl-α-allylacetoacetic acid, ethyl ester. A., II, 128.

1-Phenyl-2-allyltetrahydroindazoline, A., II, 60. a-Phenyl-a-aminomethyl-n-butyl alcohol, and

its benzoyl derivative, A., II, 306. Phenyl-2-aminophenylallylcarbinol, and its N-benzyl derivatives, A., II, 25.

Phenyl-2-aminophenylbenzylcarbinol, A., II, 25. α-Phenyl-α-(2-aminophenyl)-\(\beta\)-benzylethylene, A., II, 25.

 α -Phenyl- α -(2-aminophenyl)- β -(1'-naphthyl)ethylenes, A., II, 25.

Phenyl-2-aminophenyl-8-phenylethylcarbinol, A., II, 26.

y-Phenyl-isoamylacetoacetic acid, ethyl ester, A., II, 130.

y-Phenyl-n-amyldiethylamine, A., II, 272.

5-Phenyl-5-amylhydantoin, A., II, 348.

1-Phenyl-2-isoamyltetrahydroindazoline, A., II,

Phenyl-p-anisyl-n-butylphosphine, A., II, 283. Phenyl-p-anisylchlorophosphine, A., II, 283. a-Phenyl-\$-p-anisylethylamine, derivatives of,

A., II, 48. β-Phenyl-α-p-anisylethylamine, hydrochloride,

A., II, 293. Phenyl-p-anisylethylphosphine, its

methiodide, A., II, 283. 3-Phenyl-5-o-anisylhydantoin, A., II, 161.

3-Phenyl-5-p-anisylhydantoin, A., II, 161.

α-Phenyl-β-o-anisylpropane-αγ-dione, A., II, 224. II, α -Phenyl- β -p-anisylpropane- $\alpha\gamma$ -dione, A., 224.

 β -Phenyl- α -o-anisylpropane- $\alpha\gamma$ -dione, and its copper salt, A., II, 224.

 β -Phenyl-a-p-anisylpropane- $a\gamma$ -dione, A., II, 224.

a-Phenyl-β-p-anisylpropionic acid, A., II, 259. β -Phenyl- α -p-anisylpropionic acid, A., II, 259. Phenyl-p-anisyl-n-propylphosphine, and

methiodide, A., II, 283. 2-Phenyl-4-p-anisylpyrrole, A., II, 81.

2-Phenyl-4-p-anisylpyrrole, 5-nitroso-, A., II, 81.

4-Phenyl-2-p-anisylpyrrole, A., II, 81.

4-Phenyl-2-p-anisylpyrrole, 5-nitroso-, hydrochloride, A., II, 81.

2-Phenyl-4-p-anisylpyrrole-5-aldehyde, and its oximes, A., II, 81.

2-Phenyl-4-p-anisylpyrroline, and its picrate, A., II, 81.

4-Phenyl-2-p-anisylpyrroline, and its picrate, A., II, 81.

Phenyl-p-anisyl-p-tolylphosphine, and its p-chlorophenacyl bromide, A., II, 283.

Phenylarsenoxide, m-amino-p-hydroxy-, toxicity of, effect of p-aminobenzoate and methyl m-amino-p-hydroxybenzoate on, in mice, A., III, 136.

Phenylarsenoxides, amide-substituted, and their derivatives, toxicity and treponemicidal activity of, A., Ill, 761.

Phenylarsine oxides, preparation of, A., II, 242. Phenylarsinous acid, p-cyano-, and its imino-ether hydrochloride, A., II, 242.

Phenylarsonic acid, p-thiol-, sulphides and sulphones from, A., II, 283.

3-Phenyl-5-arylhydantoins, A., II, 161.

3-Phenyl-2-benzhydrylindene, A., II, 10. N'-N-Phenylbenzimino-N'N''-diphenyl-N''-

ethylthiocarbamide, A., II, 191. N'-N-Phenylbenzimino-N'N"-diphenyl-N"-

methylthiocarbamide, A., II, 191. N'-N-Phenylbenzimino-N'-phenylthiocarbamyl

chloride, A., II, 191.

Phenyl-p-benzoyloxyphenyl-n-butylphosphine, and its derivatives, A., II, 283.

and cis-1-Phenyl-2-benzoylcyclopentane, 2:4-dinitrophenylhydrazone, A., II, 225.

y-Phenyl-a-benzylacetoacetic acid, ethyl ester, A., II, 128.

4-Phenyl-1-benzyl-4-aminoethylpiperidine, and its hydrochloride, A., II, 349.

4-Phenyl-3-benzylcinnoline, A., II, 25.

1-Phenylbenzyl ketone, 3:5-dichloro-4-hydroxy-, and its p-nitrophenylhydrazone, A., II, 128. 1-Phenyl-2-benzylnaphthalene, A., II, 94.

2-Phenyl-4-benzyloxazol-5-one, 2-p-nitro-, A., II. 279.

2-Phenyl-1-benzylphenanthriminazole, A., II, 85.

4-Phenyl-1-benzylpiperidine-4-nitrile, A., II, 202. Phenylbenzylpyrotartaric acid. a-(a'B'-Diphenylethyl)succinic acid.

a-hydroxy-, β-Phenyl-α-benzylsuccinic acid, semi-nitrile, A., II, 296.

1-Phenyl-2-benzyltetrahydroindazoline, A., II,

Phenyl-aa-bis-(\beta'-bromoethyl) acetic acid, A., II, 273.

Phenylbisdiphenylylcarbinol, p-hydroxy-, and its acetate, A., II, 258.

Phenyl bisnorcholyl diketone, 7:12-dracetate and triacetate, A., II, 265.

3-Phenyl-2-bisnorcholylquinoxaline triacetate,

A., II, 265. Phenylbromoacetic acid, elimination of bromide

ions from aqueous solutions of, A., I, 130. a-Phenyk-α-(β'-bromoethyl)butyrolactone, II, 273.

Phenyl-3':5'-dibromomesitylquinoxaline, A., II, 310.

Phenyl-p-bromophenyl-p-anisylphosphine, II, 283. Phenyl-p-bromophenylchlorophosphine, A., II,

Pbenyl-p-bromophenyl-p-dimethylaminophenylphosphine, A., II, 282.

Phenyl-p-bromophenyl-p-dimethylaminophenylphosphine sulphide, and its derivatives,

A., II, 282. Phenyl-p-bromophenylethylphosphine, A., II,

Phenyl-p-bromophenylphosphoric acid, A., II, 282.

Phenyl-p-bromophenyl-2and -3-pyridylphosphines, and their derivatives, A., II, 282. -Phenyl-N'-p-bromophenyl-C-n-undecyl-

formazan, A., II, 205. 2-Phenyl-3-p-bromophenyl-5-n-undecyltetrazolium ohlorido, A., II, 205.

meso- $\beta\gamma$ -Phenylbutane, $\beta\gamma$ -di-p-hydroxy-. Butæstrol.

β-Phenylisobutane, α-chloro-, A., II, 9.

a-Phenylbutanol, β -amino- α -3:4-d3hydroxy-, clinical action of, A., III, 831.

a-Phenyl-n-butan-α-ol, β-amino-α-3:4-

dihydroxy-, and its hydrochloride, A., II, 295. y-Phenyl-n- and -iso-butylacetoacetic acids,

ethyl esters, A., II, 130. N-Phenyl-N'-tert.-butylcarbamide, A., II, 92.

1-Phenyl-1-n-butylcyclopentane, 2':6'-dibromo-1-p-hydroxy-, and 1-p-hydroxy-, A., II, 219.

1-Phenyl-5(3)-butylpyrazole-3(5)-carboxylic acid, 1-2':4'-dinitro-, A., II, 380.

1-Phenyl-2-n-butyltetrahydroindazoline, A., II,

Phenylbutyric acid, thiuronium salt, A., II, 268. a-Phenylbutyric acid, aβ- and ay-dicyano-, ethyl ester, A., II, 273.

 β -Phenyl-n-butyric acid, $\alpha:\beta$ -p-dichloro, ethyl ester, A., II, 220.

a-chloro-β-p-nitro-, methyl ester, A., II, 220. γ-Phenyl-n-butyric S-benzylthiuronium acid,

salt, A., II, 339. β -Phenylisobutyrie acid, S-benzylthiuronium salt, A., II, 339.

β-Phenylbutyrophenone, γ-nitro-β-m-hydroxy-, A., II, 81.

y-nitro-β-m-nitro-, A., II, 81. -Phenylbutyrophenoneoxime, y-nitro-, A., II, 81.

4-Phenylcamphor, 4-p-hydroxy-, A., II, 107. 3-aldehydo-4-Phenylcamphor, A., II, 107.

4-Phenylcamphorquinone, 4-p-nitro-, A., II, 107.

1-Phenyl-4-camphorylthiosemicarbazide, 1-p-bromo-, m-nitro-, and 2':4'-dinitro-, A., II,

 $2\vec{3}2.$ α-Phenylcarbamido-α-o-anisylacetic acid, A., II,

161. α-Phenylcarbamido-α-p-anisylacetic acid, A., II,

161. α-Phenylcarbamido-α-arylacetic acids, A., II,

161. α-Phenylcarbamido-α-o-chlorophenylacetic acid, A., II, 161.

a-Phenylcarbamido-a-p-chlorophenylacetic acid, A., II, 161.

a-N-Phenylcarbamidoisovaleric acid, A., II, 91. Phenylcarbamylsemicarbazide, and its somi-

carbazones, A., II, 365. 9-Phenylcarbazole, dimetallation of, A., II, 58.

1-amino-, and 1-9-Phenylcarbazole. 3-nitro-, A., II, 83. 3:6-dinitro-, A., II, 58.

9-Phenylcarbazole-1:2'-dicarboxylic acid, and its dimethyl ester, A., II, 58.

9-Phenylcarbazole-2:2'-dicarboxylic acid, and its dimethyl ester, A., II, 58. 9-Phenylcarbazole-2':4'-dicarboxylic acid, and

its dimethyl ester, A., II, 58. 9-Phenylcarbazole-2':6'-dicarboxylic acid, and

its dimethyl ester, A., II, 58. 9-Phenylcarbazole-2':6'-dicarboxylic acid.

3-nitro-, A., II, 58. 9-Phenylcarbazole-3:2'-dicarboxylic acid, and

its dimethyl ester, A., II, 58. Phenyl-p-(carbomethoxy)phenyl-n-butyl-

phosphine sulphide, optical resolution of, A., d- and l-Phenyl-p-(carboxymethoxy)phenyl-n-

butvlphosphine sulphide, salts of, A., II, 283. Phenyl-p-(carboxymethoxy)phenylethyl-

phosphine sulphide, and its salts, A., II, 283. alkaline Phenyl-β-cellobioside, and its degradation, A., II, 38.

- N-Phenyl-β-cbloroethylamine hydrochloride, A., II, 249.
- α -Phenyl- α -(β' -chloroethyl) butyrolactone, its derivatives, A., II, 273.
- 2-Phenyl-4-chloromethylthiazole, conversion of, 5-chloro-2-phenyl-4-hydroxymethylthiazole, A., II, 61.
- 2-Phenyl-2-p-chlorophenacyl-1:2:3:4tetrahydroarsinolinium bromide, preparation and resolution of, A., II, 65.
- dl-2-Pbenyl-2-p-chlorophenacyl-1:2:3:4tetrahydroisoarsinolinium bromide, dand l-bromocamphorsulphonates, and their d-camphorsulphonate, and its picrates, chloroplatinate and chloroaurate, and iodide, A., II, 65.
- a-Phenyl-a-o-chlorophenylethane, A., II, 254. 3-Phenyl-5-o-chlorophenylhydantoin, A., II, 161.
- δ-Phenyl-α-p-chlorophenyl-Δαγ-pentadienoic acid, A., II, 220.
- 2-Phenylchrysene, A., II, 25.
- β-Phenylcinnamamide, A., II, 124.
- a-Phenyleinnamic acid, a-p-hydroxy-, A., II, 259.
- 3:5-dihydroxy-, diacetate of, A., II, 192. 3:5-dthydroxy-a-p-hydroxy-, A., II, 191. β-Phenyleinnamonitrile, A., II, 124.
- 3-Phenylcoumarin, 6-bromo-4-hydroxv-, A., II, 303.
- 6-Phenylconmarin, β -4-hydroxy-, tetraacetate, A., II, 345. glucoside
- 4-Phenylcoumarino-4':3'-2:3-benz-4-pyrone, 4-o-hydroxy-, A., II, 345.
- β -Phenylerotonic acid, β -2:4-dichloro-, A., II,
- Phenyl-l-cysteine, synthesis of, A., II, 76.
- Phenyl-l-cysteine, p-fluoro-, and its conversion into p-fluorophenylmercapturic acid, A., II,
- 9-Phenyl-10-n-decylphenanthrene, A., II, 363.
- a-Phenyldeoxybenzoin, a-p-chloro, A., II, 129. δ-Phenyl-ay-di-p-anisyl-n-butane, A., II, 12.
- α-Phenyl-aβ-dianisylbutan-α-ol, A., II, 129. β-Phenyl-ay-di-p-anisylpropane, A., II, 12.
- 1-Phenyl-4:5-di-p-anisylpyrazole, A., II, 224.
- 13-Phenyldibenzoxanthenium perchlorate, photochemical disproportionation of, A., I, 110. Phenyldi-p-tert.-butylphenylcarbinol, o-bromo-,
- A., 11, 329. Phenyldi-p-tert.-butylphenylmethyl chloride, o-
- and m-bromo-, A., II, 329.
- Phenyldi-m- and -p-chlorophenylmethyl chloride, A., II, 329.
- a-Phenyl-α-β'-diethylaminoethyl-n-octonitrile, A., II, 202.
- Phenyl-y-diethylamino-a-phenyl-n-propylsulphone, A., II, 202.
- methiodide, A., II, 283. Phenyldiethylphosphine,
- N-Phenyl-N'N'-diethylsulphamide, N-o-chloro-, A., II, 364.
- Phenyldi-m-fluorophenylcarbinol, A., II, 329. Phenyldi-p-fluorophenylcarbinol, A., II, 329.
- Phenyldi-m-fluorophenylmethyl chloride, A., II, 329.
- Phenyldiguanide-p-sulphonic acid, and cobalt, copper, and nickel complexes, A., II,
- 1-Phenyl-3:4-dihydroisoquinoline, 1-0--m-amino-, and 1-o- and -m-nitro-, and their derivatives, A., II, 309.
- 3-Phenyl-2:4-diketotetrahydroquinazoline, and 3-p-amino-, A., II, 274.
- α -Phenyl- β -3:4-dimethoxyphenylethylamine, acetyl derivative, of, A., II, 48.
- a-Phenyl- β -3:4-dimethoxyphenylpropane- $a\gamma$ dione, A., II, 224. β -Phenyl- α -2:4-dimethoxyphenylpropane- $\alpha\gamma$ -
- dione, and its copper salt, A., II, 224. Phenyl 3:4-dimethoxystyryl ketone oxide, A., II,
- Phenyldimethylcarbinyl acctate, A., II, 221. _10-Pbenyl-9:9-dimethyl-9:10-dihydro-
- anthracene, A., II, 10. N-Phenyl-N'N'-dimethyl-N-ethylsulphamide,
- A., II, 364. δ -Phenyl- $\epsilon\epsilon$ -dimethyl-n-hexane- β -one, A., II,

- 7-Phenyl-8:8-dimethylperinaphthindane-9-one, 7-chloro-, and 7-hydroxy-, and its methyl ether, A., II, 299.
- 3-Phenyl-4:4-dimethylpiperidine, benzoyl derivative, A., II, 143.
- 5-Phenyl-4:4-dimethyl-2-piperidone, A., II, 143. 5-Phenyl-1:3-N-dimethyl-5-n-propylhydantoin, A., II, 348.
- 1-Phenyl-3:5-dimethylpyrazole, 4-amino-, and its derivatives, A., II, 238. 1-2':4'-dinitro-, A., II, 308.
- N-Phenyl-N'N'-dimethylsulphamide, N-acetyl
- derivative, A., II, 364.

 N-Phenyl-N'N'-dimethylsulphamide, N-p-bromo-, N-o-, -m-, and -p-chloro-,
- $N \cdot \hat{p}$ -iodo-, and $N \cdot m$ -nitro-, A., II, 364. β-Phenyl-γγ-dimethyl-n-valeric acid, and its
- anilide, A., II, 17. a-2-Phenyl-aβ-diphenylethylenes, a-2-amino-, A.,
- II, 25. α -Phenyl- β -(2:4-diphenyl-5-pyrrolyl)ethylene,
- a-2:4-dinitro-, A., II, 81. Phenyl-p-diphenylquinomethane, A., II, 258.
- Phenyldiphenylylcarbinols, hydroxv-, A., II, 258. Phenyl-p-diphenylyl-4'-methoxy-p-diphenylylcarbinol, A., II, 258.
- α -Phenyl- α -2-diphenylyl- Δ^{α} - α -pentene, A., II, 363.
- α -Phenyl- $\beta\beta$ -di-pp'-tetramethyldiaminodiphenylethane. and its methiodide, perchlorate, and picrate, A., II, 275.
- α -Phenyl- $\beta\beta$ -di-pp'-tetramethyldiamınodiphenylethylene, hydrochloride, methiodide, and picrate of, A., II, 275.
- β-Phenylisodurylacetic acid, A., II, 369.
- syn- and anti-Phenyl isoduryl diketones, and their oximes, A., II, 369.
- a-Phenyl-a-isodurylethane. A., II, 298.
- β -Phenyl- β -isodurylethyl alcohol, A., II, 369. a-Phenyl-β-isodurylethylene glycol, A., II, 369.
- β-Phenyl-b-isodurylvinyl alcohol, and its acetate, A., II, 369.
- m-Phenylenebis-(p-tolylazoxysulphone), A., II, 331.
- o-Phenylenediamine, reaction of, with d-glucosamine, A., II, 35.
- with phthalic anhydride, A., II, 277.

 p-Phenylenediamine, oxidative response of normal and neoplastic tissues to, A., III, 748.
- p-Phenylenedi(lead triphenyl), A., II, 66.
- o-Phenylenedioxyacetic acid, and its ethyl ester, A., II, 218.
- 5:5-o-Phenylenetrimethylene-1:3-Ndimethylhydantoin, A., II, 348.
- 5:5-o-Phenylenetrimethylene-3-Nmethylhydantoin, A., II, 348.
- β -Phenylethane, a-chloro- β -nitro-, A., II, 357.
- a-nitro-, A., II, 297.

 a-Phenylethyl alcohol, a-o- and -p-chloro-,
 a-2:5- and -3:4-dichloro-, and a-m- and -p-fluoro-, A., II, 363.
- -)-a-Phenylethyl ethyl sulphite, A., II, 150. y-Phenyl-a-ethylacetoacetic acid, ethyl ester, A.,
- II, 130. o-a-Phenylethylacetophenone, A., II, 255.
- dl-α-Phenylethylamine, hydrogen d-tartrate, A.,
- β -Phenylethylamine, derivatives, oxidation of, effect on, of tyrosinase, A., III, 688. isolation of, from Acacia, A., II, 354. mercuri-hloride and mercuri-iodide of, A., II,
- 354. $3'-\beta$ -Phenylethyl-1'-azobenzene-4-sulphonamide, 4'-hydroxy-, A., II, 257.

A.,

- 2-a-Phenylethylbenzophenone, A., II, 255. N-p- β -Phenylethylbenzylethylenediamine,
- II, 366. a-Phenyl-a-ethyl- $\Delta\beta$ -butenaldehyde, and its derivatives, A., II, 334.
- α -Phenyl- β -ethyl- Δ^{γ} -butylene- $a\beta$ -diol,
- di-p-nitrobenzoate, A., II, 334. α -Phenyl- β -ethyl- $\Delta \gamma$ -butylene- $\alpha \beta$ -diols, semihydrobenzoin and semipinacolic transformations of, A., II, 334.
- α -Phenyl- α -ethyl- Δ /-butylene- β -ol, a-amino-, picrate, A., II, 334. o-a-Phenylethyl-n-butyrophenone, A., II, 255.

- β -Phenylethylearbamic acid, N- β -chloro-, and N-chloro-N-β-chloro-, ethyl esters, A., II, 364.
- 5-Phenyl-5-ethyl-2:4-dithiobarbituric acid, A., 11, 203, β -Phenylethylene, a-chloro- β -nitro-, A., II, 357.
- 2-Phenyl-2-ethylethyleneimine, and its derivatives, A., II, 306. p-Phenylethylglucoside, photolysis of, A., I,
- 132.
- 3-Phenyl-5-ethylhydantoin, A., II, 122
- o-a-Phenylethyl-n-heptophenone, A., II, 255. o-α-Phenylethyl-n-hexophenone, A., II, 255.
- 2-β-Phenylethylcyclohexylacetic acid, p-phenylphenacyl ester, A., II, 254.
- β-Phenylethyl α-hydroxymethyl ketone, phenylhydrazone, A., II, 338.
- 2-Phenyl-1-ethylindene, 5:2-p-dihydroxy-, A., II, 130.
- 2-Phenyl-3-ethylindene, 6:2-p-dihydroxy-, and its diacetate and dipropionate, A., II, 130.
- 3:3'-β-Phenylethylidenebis-4-hydroxycoumarin, A., II, 166.
- 2-Phenyl-3-ethylindone, and its derivatives, A., II, 163. β-Phenylethyl methyl ketone, a-chloro-, and its
- 2:4-dinitrophenylhydrazone, A., II, 338. 1-Phenyl-1-ethylcyclopentane, 2':6'-dibromo-1-p-
- hydroxy-, and 1-p-hydroxy-, A., II, 219. o-α-Phenylethyl-ω-phenylacetophenone, A., II,
- 1-8-Phenylethylpiperazine, dihydrochloride, A.,
- II, 235. 1-Phenyl-2-ethylcyclopropane, A., II, 214.
- o-a-Phenylethylpropiophenone, A., II, 255.
- 1-Phenyl-5-ethylpyrazole-3:4-dicarboxylic acid, 1-p-nitro-, A., II, 236.
- a-Phenyl- β -ethylstilbene, 4:4'-dihvdroxy-, and its dimethyl ether, A., II, 129.
- β -Phenylethylsulphamic acid, sodium salt, A., II, 158.
- 5-Phenyl-5-ethyl-2:4:6-trithiobarbituric A., II, 203.
- o-a-Phenylethyl-n-valerophenone, A., II, 255. Phenylflavylium perchlorate, 3-p-nitro-, A., II,
- 232 9-Phenylfluorene, 9-chloro-, ammonolysis of,
- electrolytic catalysis in, A., I, 158. Phenyltrifluorosilane, A., II, 383.
- Phenyl- β -d-fructopyranose tetramethanesulphonate, A., II, 92.
- Phenyl-β-fructopyranoside l-methanesulphonate, A., II, 93.
- Phenyl-\beta-d-fructopyranoside triacetate 1-methanesulphonate, A., II, 93.
- 2-Phenylfuran-3:5-dicarboxylic acid, and its derivatives, A., II, 53.
- α-Phenyl-β-(2-furyl)ethylenes, a-nitroamino-, and their N-acyl derivatives, A., II, 25.
- Phenyl-D-gluco- β -D-guloheptoside, degradation of, A., II, 38.
- Phenyl-D-glucosazone, detection of, C., 167. 6-fluoride, and
- Phenyl-β-d-glucoside, 6-fluc 2:3:4-triacetate, A., II, 186. α - and β -Phenylglucosides, photolysis of, A., I, 132.
- Phenyl-D-glucosotriazole, C., 167.
- 2-Phenyl- \bar{D} -glucosotriazole, and its tetra-acetate and tetrabenzoate, A., II, 292.
- Phenylglyoxal 3:5-dichloro-4-hydroxy-, p-nitrophenylosazone, A., II, 128.
- a-Phenylhept-δ-en-β-yne-aζ-diol, A., II, 178. 1-Phenyl-1-n-heptylcyclopentane, A., II, 219. Phenyl hexahydrobenzyl ketone, A., II, 293.
- δ-Phenylhexan-γ-one, p-hydroxy-, and its derivatives, A., II, 367.
- β-Phenylhexophenone, γ-nitro-, A., II, 81. 5-Phonyl-5-hexylhydantoin, A., II, 348.
- 2-Phenyl-3-cyclohexylindone, and its phenylhydrazone, A., II, 163.
- 1-Phenyl-1-n-hexylcyclopentane, 1-p-hydroxy-, A., II, 219.
- 5-Phenylhydantoin, 5-p-chloro-, hydroxy-, A., II, 161.
- Phenylhydrazine, reaction of, with chloro-derivatives of substituted amides of malonic acid, A., II, 159.
- a-Phenylhydrazinomalondianilide, a-chloro-, A.,

- a-Phenylhydrazinomalondi-m-chlorotoluidide, a-chloro-, A., II, 159.
- a-Phenylhydrazinomalondi-o- and -p-toluidides, a-chloro-, A., II, 159.
- a-Phenylhydrazinomalondi-m-xylidide, a-chloro-, A., II, 169.
- 6-Phenylhydrouracil, 5:5-dichloro-6-hydroxy-, A., 11, 171.
- 1-Phenyl-2-a-hydroxybenzhydryl-2-methylhydrindane, 1-hydroxy-, A., II, 299.
- cis-1-Phenyl-2-α-hydroxybenzylcyclopentane, A., II, 225.
- 2-Phenyl-5-tetra hydroxybutylfuran-3-carboxylic acid, and its ethyl ester, and its tetra-acetate, A., II, 53.
- a-Phenyl- α -(β' -hydroxyethyl)butyrolactone, A., II, 273.
- N-Phenyl-N- β -hydroxyethylcarbamide, A., II, 255.
- 2-Phenylhydroxylaminoglycollylindole, A., II, 237.
- 2-Phenylhydroxylaminoglycollyl-3-methylindole, A., 1I, 237.
- 3-Phenylhydroxylaminoglycollyl-2-methylindole, A., II, 237.
- 4-Phenyl-3-hydroxymethylenecamphor, and its benzoyl derivative, A., II, 107.
 2-Phenyl-4-hydroxymethylthiazole, A., II, 62.
- 2-Phenyl-4-hydroxymethylthiazole, A., 11, 52. 2-Phenyl-4-hydroxymethylthiazole, 5-chloro-,
- and its derivatives, A., II, 62.

 Phenyl-n-hydroxyphenyl-n-butylphosphine
- sulphide, A., II, 283. β-Phenyl-a-p-hydroxyphenylethylamine hydrochloride, A., II, 293.
- Phenyl-p-hydroxyphenylethylphosphine, and its derivatives, A., II, 283.
- 3-Phenyl-5-o-hydroxyphenylhydantoin, A., II, 161.
- 3-Phenyl-5-p-hydroxyphenylhydantoin, A., II, 161.
- 8-Phenyl-a-p-hydroxyphenylpropionic acid, A., II, 259.
- α-Phenyl-β-3:5-diiodo-4-hydroxyphenylpropionic acid, A., II, 15.
- 2-Phenyl-4-iodomethylthiazole, A., II, 62.
- 1-Phenyl-3-\gamma-keto-\u00e3-cyano-\u00e3-carbethoxy-n-butylpyrazol-5-one-4-carboxylic acid, ethyl ester, and its copper compound, A., II, 212.
- Phenyl-β-lactoside, alkaline degradation of, A., II, 38.
- Phenylmercapturic acid, p-fluoro-, A., II, 193. from fluorobenzene, metabolic formation of, A., III, 827.
- l-Phenylmercapturic acid, formation of, from phenyl-l-cysteine in vivo, A., III, 202. synthesis of, A., II, 76.
- Phenylmercuric nitrate, determination of, and sterility tests, C., 37.
- Phenyl mesityl diketone, p-bromo-, and m- and p-nitro-, A., II, 310.
- α-Phenyl-a-mesitylethane, A., II, 298.
- β -Phenyl- β -mesitylethyl alcohol, and its p-nitrobenzoate, A., II, 369.
- α-Phenyl-β-mesitylethylene glycol, and its derivatives, A., II, 368, 369.
- β-Phenyl-α-mesitylpropionic acid, and its amide, A., II, 263.
- A., 11, 263. \(\beta\)-Phenyl-a-mesitylpropionitrile, A., II, 263.
- Phenylmisitylquinoxaline, 4'-bromo-, and m- and p-nitro-, A., II, 310.
- β-Phenyl-β-mesitylvinyl alcohol, A., II, 368. β-Phenyl-β-mesitylvinyl ethyl and methyl ethers, A., II, 369.
- 2-Phenyl-4-(3'-methoxy-4'-acetoxy) benzylideneoxazole-5-one, 2-2'-, 4-5'-, and 4-6'-bromo-, 2-2':5'-, 2-2':6'-, and 4-5':6'-dibromo-, 2-2':5':6'-, and 4-2':5':6'-lribromo-, 4-5'-, and 4-6'-chloro-, 4-5':6'-dichloro-, and
- 4-5'-iodo-, A., II, 59. γ-Phenyl-α-4-methoxybenzylbutyric acid, A., II, 94.
- β-Phenyl-p-methoxybutyrophenone, γ-nitro-, A., II, 81.
- Phenylmethyl allyl sulphide, A., II, 182.
- γ -Phenyl- α -methylacetoacetic acid, ethyl ester, A., II, 130.
- 9-Phenyl-10-methylanthracene, picrate, A., II,

- δ-Phenyl- β -methyl- Δ^a -buteno- δ -lactone, A., II, 287.
- Phenyl β -methyl- $\Delta \gamma$ -butenyl ketone, and its semicarbazone, A., II, 33.
- a-Phenyl-β-methyl-Δγ-butylene-αβ-diols, semihydrobenzoin and semipinacolic transformations of, A., II, 334.
- α-Phenyl-β-methyl-Δ^γ-butylene-β-ol, α-amino-, picrate, A., II, 334.
- 2-(α-Phenyl-γ-methyl-n-butyl)isoquinoline, 2-γ-hydroxy-, A., II, 347.
- Phenylmethylcarbinol, optically active, A., II, 150.
- dl-Phenylmethylcarbinyl acetate, A., II, 221.
 2-Phenyl-4-methyl-5-γ-chloro-β-hydroxy-n-propylthiazole, hydrochloride of, A., II, 205.
- 1-Phenyl-3-methyl-4:5-diketopyrazoline-4phenylhydrazone, 1-p-nitro-, A., II, 203.
- 2-Phenyl-5-methyl-1:3-dioxan, 5-amino-, and 5-nitro-, stereoisomeric, A., II, 23.
- a-Phenyl- β -3:4-methylenedioxyphenylpropaneay-dione, A., II, 224.
- 2-Phenyl-3-methyl-2-ethylethyleneimine, and its derivatives, A., II, 306.
- 4-Phenyl-2-methylcyclohexanecarboxylic acid, A., II, 160.
- ζ-Phenyl-ε-methyl-Δγ-hexene, A., II, 328.
- 4-Phenyl-2-methylcyclohexylacetic acid, and its derivatives, A., II, 160.
- 4-Phenyl-1-methyl-4-(a-hydroxyethyl)piperidine, A., II, 272.
- 2-Phenyl-3-methylindone, A., II, 10. and its phenylhydrazone, A., II, 163.
- 5-Phenyl-3-methylisooxazole, 5-p-amino-, and its derivatives, and 5-p-nitro-, A., II, 238. ϵ -Phenyl- β -methyl- $\Delta\beta\delta$ -pentadien- α -al, and its
- derivatives, A., II, 10. o-Phenyl- β -methyl- $\Delta^{\alpha\gamma}$ -pentadienoic acid, A and
- B forms, A., II, 287.

 1-Phenyl-1-methylcyclopentane, l-p-hydroxy-,
- A., II, 219. ϵ -Phenyl- γ -methyl- Δ^{δ} -penten- Δ^{α} -inen- γ -ol, A.,
- II, 358. 9-Phenyl-10-methylphenanthrene, 9-3':5'-
- 9-Phenyl-10-methylphenanthrene, 9-3':5'-dichloro-2'-hydroxy-, and its 2'-acetate, A., II, 100.
- 3-Phenyl-4-methylpiperidine, α and β -forms of, and their derivatives, A., II, 143.
- 4-Phenyl-1-methylpiperidine, A., II, 202. hydrochloride, A., II, 169.
- 4-Phenyl-1-methylpiperidine, 4-2'-hydroxy-, and 4-2'.3'-dihydroxy-, A., II, 272.
 3-Phenyl-1-methylpiperidine-3-carboxylic acid,
- 3-Phenyl-1-methylpiperidine-3-carboxylic acid, and its ethyl ester, and their derivatives, A., II, 273.
- 4-Phenyl-1-methylpiperidine-3-carboxylic acid, hydrochloride, and its ethyl ester, A., II, 169.
- 4-Phenyl-1-methylpiperidine-4-carboxylic acid, allyl, cyclohexyl, β-hydroxyethyl and n-propyl esters, hydrochlorides of, A., II, 273.
- ethyl ester. See Demerol.
- 4-Phenyl-1-methylpiperidine-4-carboxylic acid, 4-2'-hydroxy-, lactone, hydrochloride, A., II, 272.
- 4-Phenyl-1-methylpiperidine-4-nitrile, A., II, 202.
- 4-(2'-Phenyl)-1-methylpiperidine-4-nitrile, 4-2'-hydroxy-, benzoyl derivative, hydrochloride, A., II, 272.
- 5-Phenyl-4-methyl-2-piperidone, α and β -forms of, A., II, 143.
- 4-Phenyl-1-methyl-4-piperidylphenylsulphone, A., II, 203.
- 5-Phenyl-3-N-methyl-5-n-propylhydantoin, A., II. 348.
- Phenylmethylpyrazolone, p-nitro-, A., II, 203.
- 1-Phenyl-3-methyl-5-pyrazolone, 4:4-dihydroxy-1-p-nitro-, A., II, 203. 4:4-dinitro-1-p-nitro-, A., II, 203.
- a-Phenyl-8-6-methyl-2-pyridyl- Δ^{ay} -butadiene, picrate, A., II, 233.
- a-Phenyl-δ-6-methyl-2-pyridyl-n-butane, picrate, A., II, 233.
 δ-Phenyl-a-6-methyl-2-pyridyl-n-butan-β-ol,
- picrate, A., II, 233. a-Phenyl-δ-6-methyl-2-pyridyl-Δ^a-buten-γ-ol, picrate, A., II, 233.

- 3-Phenyl-1-methylpyrrolidine, and its picrate, A., II, 273.
- 3-Phenyl-1-methylpyrrolidine-3-carboxylic acid, ethyl ester, and its picrate, A., II, 273.
- a-Phenyl-β-methylstilbene, α-p-hydroxy-, A., II, 129.
- N-Phenyl-N-methylsulphamic acid, sodium salt,
- A., II, 158.
 6-Phenyl-4-methyl-1:2:3:6-tetrahydrophthalic acid, and its anhydride, A., II, 363.
- 1-Phenyi-2-methyl-3:4-cyclotetramethylene-5pyrazolone, 1:1- and 1:2-additive compounds of, A., II, 111.
- N-Phenyl-N-methylthiocarbamide, reaction of, with sulphur monochloride, A., II, 352.
- 2-Phenyl-4-methyl-2:1:3-triazole, 5-amino-, derivatives of, A., II, 237.
- N-Phenyl-N'-morpholinomethylcarbamide, A., II, 239.
- 2-Phenylnaphthalene, 3:2-o-dihydroxy-, A., II, 110.
 1-Phenylnaphthalene-2:3'-dicarboxylic acid,
- A., II, 373.
- 1-Phenylnaphthalene-2':3'-dicarboxylic acid, anhydride, A., II, 373.
- 1-Phenylnaphthalene-2:4'-dicarboxylic acid, A., II. 373.
- a-Phenyl-1:8-naphthalide, a-chloro-, A., II, 225. a-Phenyl-a-1-naphthylacetic acid, β -diethylamino-thyl, γ -diethylamino-n-propyl, β -morpholinoethyl and β -piperidinoethyl
- β-morpholinoethyl and β-piperidinoet esters, hydrochlorides, A., II, 336.
 4-Phenyl-3-(1'-naphthyl)cinnoline, A., II, 25.
- N-Phenyl-N'-a-naphthyl-C-n-undecylformazan, A. II, 205.
- 2-Phenyl-3-a-naphthyl-5-n-undecyltetrazolium chloride, A., II, 205.
- 3-Phenylisonipecotic acid, and its derivatives, A., II. 143.
- Phenyl 3-nitromesityl diketone, A., II, 310.
- Phenyl 3'-nitromesityl diketone, 4-nitro-, A., II, 310.
- Phenyl 3':5'-dinitromesityl diketone, 3-nitro-, A., II, 310.
- Phenyl-3'-nitromesitylquinoxaline, and 4'-nitro-, A., II, 310.
- Phenyl-3":5"-dinitromesitylquinoxaline,
- 3'-nitro-, A., II, 310. β-Phenyl-β-3-nitromesitylvinylamine, and its benzoyl derivative, A., II, 298.
- 2-Phenyl-3:3'-nitro-4'-methoxyphenyl quinoxaline, A., II, 297.
- 5-Phenyl-1-2':4'-d:nitrophenyl-5-methylpyrazole, A., II, 308.
- 3-Phenyl-5-m-nitrophenylisooxazole, A., II, 17. 5-Phenyl-3-m-nitrophenylisooxazole, A., II, 17.
- N-Phenyl-N'-p-nitrophenyl-C-n-undecylformazan, and its copper derivative, A., II,
- Phenyl-3':5'-dinitro-2':4':8'-triisopropylphenyl diketone, 3-nitro-, A., II, 310.
- Phenyl norcholyl ketone, and its derivatives, A., II, 265.
- Phenyl norcholyl ketone, 23-bromo-, triacetate, and 23-hydroxy-, 23-acetyl derivative, triacetate, A., II, 265.
- 1-Phenyl-1-n-octylcyclopentane, A., II, 219.
- 3-Phenylisooxazole-5-aldehyde, and its derivatives, A., II, 238.
- 3-Phenylisooxazole-5-carboxylic acid, A., II, 238.
- 3-Phenylisooxazolyl-5-carboxylhydroxamic acid, A., II, 238.
- β-3-Phenyl-5-isooxazolylethylene, α-nitro-, A., II, 238.
- 4-Phenylpentamethylene acid, A., II, 202.
- 4-Phenylpentamethylene sulphide-4-nitrile, A., II, 202. β-Phenylpentan-β-ol, a-amino-, and its deriv-
- atives, A., II, 306. γ -Phenyl- Δ^{δ} -penten- β -one, and its derivatives,
- A., II, 334.

 Phenyl-47-n-pentenyl ketone, and its semi-carbazone, A., II, 33.
- 10-Phenylphenothiazine, metallation of, A., II, 353.
 - 5-oxide, and 3-nitro-, A., II, 353.

- and 10-Phenylphenothiazine. 10-o-amino-. 10-o-nitro-, A., II, 353.
- 4'-chloro-2'-amino- and -2'-nitro-, A., II, 353. 10-Phenylphenothiazine-1-carboxylic acid. methyl ester, A., II, 314.
- 10-Phenylphenothiazine-4(or -2-)-carboxylic acid, and its methyl ester, A., II, 353. 1-Phenyl-5-phenoxymethylpyrazole-3:4-
- dicarboxylic acid, 1-p-nitro-, A., II, 236. Phenylphosphonic acid, dithallium salt, A., II,
- 4-Phenylpiperidide-4-carboxylic acid, ethyl ester, A., II, 202.
- 3-Phenylpiperidine, benzoyl derivative, A., II, 143.
- 3-Phenylpiperidines, synthesis of, A., II, 143.
- 4-Phenylpiperidine, synthesis of, and its derivatives, A., II, 272.
- 4-Phenylpiperidines, synthesis of, A., II, 169. 3-Phenylpiperidine-3-carboxylic acid, ethyl ester,
- and nitroso-, A., II, 273. 3-Phenylpiperidine-4-carboxylic
- 3-Phenylisonipecotic acid. 4-Phenylpiperidine-5-carboxylic acid. hydrochloride, A., II, 169.
- 4-Phenyl-2-piperidone, A., II, 169. 5-Phenyl-2-piperidone, A., II, 143.
- 4-Phenyl-2-piperidone-5-carboxylic acid, and its ethyl ester, A., II, 169.
- 3-Phenyl-4-piperidylcarbinol, A., II, 143. Phenylpropaldehyde, synthesis of, and its nuclear homologues, A., II, 222.
- β -Phenylpropaldehyde, and its β-cyano-, diacetal, A., II, 273.
- a-Phenylpropane, aβ-diamino-, meso-form of, properties and resolution of, A., II, 330.
- d- and l-a-Phenylpropanes, aβ-diamino-, and their sulphates, A., II, 330.
- β-Phenylpropane-ay-disulphonic acid, di-chlorobenzylthiouronium salt, A., II, 328. di-S-p-
- a-Phenylpropane-β-sulphonic acid, α-hydroxy-, sodium salt, A.; II, 328.
- γ-Phenylpropane-a-sulphonic acid, β-hydroxyand its salts, and derivatives, A., II, 328.
- β-Phenylpropionic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, A., I. 281.
- β-Phenylpropionic acid, a-chloro-β-nitro-, A., II, 357.
 - a-cyano-, ethyl ester, hydrazide, A., II, 91. a- and β-hydroxy-, aminoalkyl and dialkylaminoalkyl esters, salts of, A., II, 46.
- O-β-Phenylpropionylsalicylic acid, methyl ester, A., II, 166.
- a-Phenylisopropyl alcohol, o-chloro-, A., II, 10. y-Phenyl-n- and -iso-propylacetoacetic acids, ethyl esters, A., II, 130.
- β-Phenylpropylamines, isomeric, physical constants of, A., II, 131.
- $8-\beta'$ -Phenylisopropyl- γ -aminopropylamino-6methoxyquinoline, and its salts, A., II, 57.
- Phenylpropylenes, sulphonation of, A., II, 328. β -Phenylpropylene- $\alpha\gamma$ -disulphonic acid, and its derivatives, A., II, 328.
- a-Phenyl-Δa-propylene-β-sulphonamide, A., II, 328.
- a-Phenyl-Δa-propylene-y-sulphonamide, A., II, 328.
- y-Phenyl-Δα-propylene-α-sulphonamide, A., II,
- α -Phenyl- Δ^{α} -propylene- β -sulphonic acid, salts, A., II, 328.
- a-Phenyl-Δa-propylene-γ-sulphome acid, and its salts, A., II, 328.
- 2-Phenyl-2-n-propylethyleneimine, and its derivatives, A., II, 306.
- 5-Phenyl-5-n-propylhydantoin, 5-p-bromo-, A., II, 348.
- 3:3'-y-Phenylpropylidenebis-4-hydroxy-
- coumarin, and its dimethyl ether, A., II, 166. 3-Phenyl-2-n-propylindone, and its phenylhydrazone, A., II, 163.
- dl-β-Phenyl-n-propylmethylamine, cology of, A., III, 279. pharma-
- 2-Phenyl-4-isopropyloxazol-5-one, 2-p-nitro-, A., II. 279.
- 1-Phenyl-1-n-propylcyclopentane, 2':6'-dibromo-1-p-hydroxy-, and 1-p-hydroxy-, A., II, 219.

- 1-Phenyl-2-isopropylcyclopropane, A., II, 214. 1-Phenyl-5-propylpyrazole-3:4-dicarboxylic acid,
- 1-p-nitro-, A., II, 236. γ-Phenylpropylsulphamic acid, sodium salt, A., II, 158.
- 1-Phenyl-2-nand-iso-propyltetrahydroindazolines, A., II, 60.
- 3-Phenylpyrazole, 5-hydroxy-, b 5-benzoyl derivatives, A., II, 58. b-acetyl and
- 1-Phenylpyrazoline, 5-imino-3-hydroxy-, acetyl and benzoyl derivatives, A., II, 144.
- 3-Phenyl-5-pyrazolone, acylation of, A., II, 58. 3-hydroxy-, 1-Phenyl-5-pyrazoloneimide,
- Phenyl-5-pyrasoso-acylation of, A., II, 144. 1-Phenylpyridaz-6-one, 4-hy and -1-p-nitro-, A., II, 145.
- a-Phenyl- δ -2-pyridyl- $\Delta^{\alpha\gamma}$ -butadiene, and
- picrate, A., II, 233. δ-Phenyl-a-2-pyridyl-n-butane, picrate, A., II,
- δ -Phenyl-a-2-pyridyl-n-butan- β -ol, picrate, A., II. 233.
- δ -Phenyl- α -4-pyridyl-n-butan- β -ol, picrate, A.,
- δ -Phenyl- δ -2-pyridyl- Δ^{α} -buten- γ -ol, A., II, 233. a-Phenyl- δ -4-pyridyl- Δ^a -buten- β -ol, A., II, 233.
- α -Phenyl-o-2-pyridyl- Δ^{α} -buten-y-one, and its picrate, A., II, 234.
- and 2-Phenylpyrimidine, 4:6-diamino-, 4:6-diamino-2-hydroxy-, hydrochloride,
- 3-Phenylpyriminazole, and its salts, A., II, 111. 3-Phenylpyriminazole-2-carboxylic acid, deriv-
- atives of, A., II, 111. 1- and 2-Phenylpyrroles, preparation of, C.,
- 3-Phenylpyrrolidine-3-carboxylie ethyl acid. ester, A., II, 273.
- Phenylpyrylium perchlorate, 3'-nitro-3-p-nitro-, A., II, 232.
- 2-Phenylquinoline-3-carboxylic acid, ethyl ester, and its pierate, A., II, 308.
- α-Phenyl-δ-2-quinolyl-n-butane, picrate, A., II, 234.
- a-Phenylstilbene, a-p-hydroxy-, and its methyl ether, A., II, 129.
- β-Phenylstilbene, α-chloro-β-p-chloro-, A., II,
- Phenyl styryl ketone, m-nitro-, and its dibromide, A., II, 17.
- Phenyl styryl ketones, oxides of, molecular rearrangements of, A., II, 224.
- Phenylsulphamic acid, sodium salt, A., II, 158. N1-Phenylsulphanilamide, N1-p-nitro-, N4-n-acyl derivatives, A., II, 26.
- N^1 -Phenylsulphathiazoline, and its N^4 -acyl derivatives, A., II, 26.
- a-Phenyltaurine, A., II, 190.
- 2-Phenyl-1:2:3:4-tetrahydrossoarsinoline, its derivatives, A., II, 65.
- 2-Phenyl-1:2:3:4-tetrahydroisophosphinoline, and its methiodide, A., II, 65.
- 6-Phenyl-1:2:3:6-tetrahydrophthalic acid, A., II,
- 4-Phenyltetrahydropyran-4-carboxylic acid, and its β-diethylaminoethyl ester, A., II, 202
- 4-Phenyltetrahydropyran-4-nitrile, A., II, 202. 1-Phenyl-1:2:3:4-tetrahydrowoquinoline,
- and -m-amino-, A., II, 309. 2-Phenylthiazole-4-carboxylic acid, and its deriv-
- atives, A., II, 62.
- 2-Phenylthiazole-4-carboxylic acid, 5-chloro-, A., II. 62.
- 2-Phenylthiazole-5-carboxylic acid, and its derivatives, A., II, 146. 2-Phenylthiazole-4:5-dicarboxylic acid, and its
- derivatives, A., II, 146. Phenylthiocarbamide, reaction of, with copper
- acetate, A., II, 330. Phenylthiocarbamides, A., II, 330, 352.
- Phenylthiocarbimide, preparation phenyl azide, A., II, 364.
- p-Phenylthiolphenylarsonic acid, p-p'-amino-, p-p'-cyano-, and p-p'-nitro-, A., II, 243.
- Phenyl-p-tolylazoxysulphone, A., II, 331. Phenyl-p-tolylazoxysulphone, m-nitro-, A., II,
- Phenyl p-tolyl ketmethylimine, A., II, 258.

- Phenyl-N-o-, -m-, and -p-tolylnitrones, 2:4:6-trinitro-, A., II, 371.
- Phenyltrialkylammonium iodides, formation of, in methyl alcohol, A., I, 286.
- 1-Phenyl-1:2:3-triazole-4-carboxylic acid, ethyl ester, A., II, 145.
- 1-Phenyl-1:2:3-triazole-4:5-dicarboxylic ring closure with, and its derivatives, A., II,
- α-Phenyl-β-(3:4:5-trimethoxyphenyl)acrylamide, a-p-hydroxy-, A., II, 314. a-Phenyl-\$\textit{\beta}\$-3:4:5-trimethoxyphenylethylamine,}
- acetyl derivative of, A., Il, 48.
- a-Phenyl-β-(3:4:5-trimethoxyphenyl)ethylene,
- a-cyano-a-p-hydroxy-, A., II, 314. a-Phenyl-y-3:4:5-trimethoxyphenylpropylamine, acetyl derivative of, A., II, 48.
- Phenyl 3:4:5-trimethoxystyryl ketone, A., II, 48. N-Phenyl-NN'N'-trimethylsulphamide, A., II,
- Phenyltripyridine, copper salt, and p-nitro-, A., II, 27.
- Phenylundecoic acid, iodo-, ethyl ester, A., II, 295.
- 6-Phenyluracil, 5-chloro-, A., II, 171.
- a-Phenylvaleric acid, δ-chloro-α-cyano-, ethyl ester, A., II, 273.
- β-Phenyltsovaleric acid, α-hydroxy-, A., II, 190. 2-a-Phenylvinyl-6-methyltetrahydropyran, A., II, 198.
- a-Phenyl-a-p-xenylacetic acid, and its esterhydrochlorides, and a-hydroxy-, A., II, 15.
- Pheretima posthuma, septa of, muscle-fibres in, A., III, 399.
- Phlein, and its methyl ether, A., II, 8. Phloem, transport of, A., III, 306.
- Phloroglucinol, detection of, C., 118. spot tests for, C., 168.
- dihydrate, crystals, axial lengths of, A., I, 31. Phlox, polyploidy in, induced by colchicine, A., III, 313.
- Phonicin, dimethyl ether. See 2:2'-Dimethoxy-4:4'-dimethyldiphenyl-3:6:3':6'-diquinone.
- n- and 180-Phœnicins, synthesis of, A., II, 49. Phonocardiography, clinical application of, A.,
- III, 241. Phosgene, poisoning by. See Poisoning, carbonyl chloride.
- Phosphatase, acid, histochemistry of, use of
- manganese in, A., III, 238. in red blood-corpuscles, A., III, 691.
- acid and alkali, activity of, effects of sex hormones on, A., III, 737. activation of, A., III, 501.
- alkaline, activity of, failure to demonstrate, in inclusion bodies, A., III, 573.
 - in kidney, histochemical test for, A., III, 713.
- level of, in urine, in relation to renal injury, A., III, 117.
- cocarboxylase, in dog serum, A., III, 367. detection of, in kidneys, C., 176.
- disappearance of, from hydronephrotic kidney, A., III, 116.
- in femurs. See under Femur.
- in intestinal mucosa, A., III, 558.
- inhibition of, by fluorides, A., III, 691. intestine, kidney, and liver, effect on, of
- castration and testosterone propionate, A., III, 691.
- plasma, effect on, of stilbæstrol treatment in prostatic cancer, A., III, 667.
- ultracentrifugation of, A., III, 764. renal, A., III, 743.
- serum-, activity of, during hepatic damage, effect on, of cyanide, fluoride, and magnesium, A., III, 432.
 - in disease and health, A., III, 433.
- in rickets in Jerusalem children, A., III, 718. effect on, of choline and cystine, in dogs on
- deficient diets, A., III, 749. wheat, cocarboxylase hydrolysis by, A., III,
- Phosphatase II, alkaline, activation of, by metal ions, A., III, 288.

839.

reaction of with metal activators and apophosphatase, A., III, 768.

Phosphates. See under Phosphorus.

Phosphate rock, defluorinated, calcium and phosphorus availability of, for rats, A., III,

Phosphatides, determination of, in brain material, by conductometric and electrometric titration, C., 77.

effect of, on carotene and vitamin-A utilisation, A., III, 43.

occurrence and physiology of, A., III, 789. Phosphines, dissymmetric tertiary, synthesis of, A., II, 282.

Phosphites. See under Phosphorus.

differentiation of, from Phosphoesterase, pyrophosphatase, A., III, 691. in burns and wounds in rats, A., III, 289.

Phosphoglyceric acid, and its derivatives, effect of, on small intestine of rabbit, A., III, 34. determination of, C., 91.

d(-)- β - and d(+)- α -Phosphoglyceric acids, synthesis of, A., II, 91.

Phosphoglycerol, determination of, C., 140. Phospholipins, formation of, by hepatectomised

dog as measured with radiophosphorus, A., III, 51. iodine value of, determination of, C., 92.

oxidation of, by ascorbic acid catalysed by iron compounds, A., 111, 490.

plasma. See under Blood-plasma.

relation of, to fat absorption from intestine, A., III, 595.

tissue-, composition of, diet in relation to, A., III, 750.

turnover of, choline in relation to, A., III, 750. Phosphonitrilic chloride, trimeric, structure of, A., 1, 5.

Phosphors, cadmium sulphide-copper, dielectric after-effect in, A., I, 117

copper-zine sulphide, photo-electric ductivity of, under a-rays, A., I, 138. crystalline, brightness of, in relation to

temperature, A., I, 266. phosphorescence of, decay of, A., I, 78. halide, containing tin, structure of, A., I, 78.

luminescence of, A., 1, 3, 78, 212. spectra of, phosphorescence and scintillation, A., 1, 78.

zinc silicate, yellow, A., I, 89.

Phosphoric acid. See under Phosphorus.

Phosphorus, affinity of, for metals, A., I, 111. atoms, nuclei, neutron, and proton emission from, A., I, 75.

black, preparation and stability of, A., I, 182.

in solar atmosphere, A., I, 134. isotopes, radioactive, distribution of, in leukæmic patients, A., III, 120, 544.

retention of, administered in different chemical forms, A., III, 678. treatment with, of polycythæmia, A., III,

792. phytin, determination of, C., 191.

poisoning by. See under Poisoning. red, determination in, of hypophosphorous and phosphorous acids, C., 10. spectrum of, band, A., I, 27.

white, surface tension of, A., I, 12.

Phosphorus compounds, absorption of, in breastfed infants in relation to rickets, A., III.

675. availability of, in cereals, A., III, 197.

balance of, effect of work on, in geldings, A., III, 274.

in pregnant women, A., III, 678.

biochemical effect of sex hormones on, in rats, A., III, 737.

blood. See under Blood.

labelled, distribution, excretion, and retention of, effect of parathyroid extract on, A., III,

metabolism of. See under Metabolism. requirements of, for fattening lambs, A., III, 485.

utilisation of, efficiency of, by albino rat, A., III, 750.

Phosphorus trichloride, hydrolysis of, A., I, 157. trihydride, analysis of, C., 110. pentoxide, determination of, in fruit and fruit products, C., 31.

Phosphorus pentoxide, equilibrium of, with calcium oxide, A., I, 281.

with sodium oxide, A., I, 80. specification for, C., 196.

pentasulphide, reaction of, with barbituric acids, A., II, 203.

Phosphoric acid, biochemical importance of, for agriculturally useful animals, A., III,

determination of, gravimetrically, C., 10. dissociation constant of, A., I, 127.

Phosphates, appetite for, decreased, after parathyroidectomy in rat, A., III, 339. determination of, C., 59.

in nitrophoska, G., 188.

exchange of, in resting cardiac muscle, A., 111, 203.

pH of mixtures of, with chlorides, A., I, 127. in blood, liver, and muscle, effect of insulin on, A., III, 407.

osmosis with, A., III, 704.

phosphatase models of, A., II, 69.

polymeric, A., I, 204, 276.

rejuvenation of, in adenine nucleotides, A., III, 755.

relation of, to silicates and sulphates, A., I,

Hexametaphosphates, hydrolysis of, A., I, 204. Orthophosphates, spectra of, Raman, and structure, A., I, 117.

Metaphosphates, high-molecular, mol. wt. of, determination of, charge effect in, A., I,

Pyrophosphates, hydrolysis of, A., I, 204. Triphosphates, hydrolysis of, by triphosphatase of plants and tumours, A., III, 841. Tripolyphosphates, hydrolysis of, A., I, 204.

Phosphites, detection of, with potassium tellurite, C., 159.

spectra of, Raman, and structure, A., I, 117. Hypophosphoric acid, preparation of, A., I, 256.

Hypophosphites, detection of, with potassium tellurite, C., 159. spectra of, Raman, and structure, A., I,

117. Phosphorus organic compounds, stereochemistry

of, A., II, 282. Phosphorus trimethyl, spectrum absorption, infra-red, A., I, 117.

Phosphoric acid, esters, acid strengths of, A., I, 127.

Phosphates, organic enzymic hydrolysis of, A., III, 140.

Phosphorus determination and separation :-

determination of, colorimetrically, as molybdivanadophosphoric acid, C., 158. gravimetrically, with hydroxyquinoline C., 62.

in cast iron and steel, C., 10.

in feeding-stuffs, C., 181. in ferrous alloys, C., 10. in ferrovanadium, C., 159.

in ferrovanadium and vanadium steel C., 63.

in organic compounds, C., 19.

in pig iron, C., 11. in plants, C., 40.

in plant materials, C., 189. vanadometrically, C., 12.

separation of, from its halides, C., 63. Phosphoryl chloride, hydrolysis of, A., I, 157. reaction of, with boron halides, A., I, 23.

Phosphorylase, muscle, crystalline, A., 1II, 217. plant, synthesis of polysacharides by, in presence of dextrin, A., III, 500. potato, A., III, 840.

Phosphorylation, respiratory, enzyme system in, A., III, 558.

Phosphorylcholine, A., II, 323.

derivatives of, A., II, 248. metabolism of. See under Metabolism. Photochemical after-effect, A., I, 205.

oxidation in rigid media, A., I, 109. reactions, A., II, 142, 346.

in aromatic compounds, A., I, 255. in gels, A., I, 132.

Photochemistry, studies in, A., I, 21, 229.

Photo-electric cells. See under Cells.

extinction, measurement of, C., 200.

law, Einstein's, for internal conversion of β-rays, A., I, 139.

rectifiers, selenium, measurements on, A., I, 74.

cloud-chamber, of electron Photographs, avalanches, C., 205.

X-ray, single-crystal, indexing of, by "tilted crystal" method, C., 96. See also under Radiographs.

Weissenberg, equi-inclination, reciprocal Lorentz-polarisation factor charts for, C., reciprocal

Photographic developers, autoxidation of, A., I,

development, by hydroxylamine, A., I, 67. kinetics of, A., I, 20.

emulsions, determination in, of silver, C., 154.

gamma, measurement of, instruments for, (P.), C., 150.

images, formation and development of, A., I, 289.

latent, A., I, 21.

plates, contrast of, in ultra-violet, C., 200. prints, determination in, of sodium thiosulphate, C., 124.

processes, effect of temperature on, A., I, 109. Photography, colour, visual processes and, A., III, 462.

Photometers, curves for use with, C., 46. for determination of blood volume, C., 124. for measurement of film thickness, C., 198.

micro-, C., 98. non-recording, with variable contrast sensitivity, C., 148.

photo-electric, construction of, C., 98. photoelectric, C., 46.

for measuring light scattered by transparent materials, C., 99.

step-, for field and emergency use, C., 148. Photometry, photo-electric, errors in, C., 148.

Photosynthesis, A., III, 312. earbon dioxide reduction during, A., I, 43.

in plants, A., III, 154, 155. mechanism of, A., III, 231. products of, A., III, 706.

Phoxinus lavis, A., II, 84.

Phrenicotomy, unilateral, reflex inspiratory stimulation after, A., III, 17.

Phryxothrix, green and red luminescence of, A., III. 597.

tsoPhthalaldehyde, 4:5-dthydroxy-, and its bisphenylhydrazone, A., II, 162.

Phthalaz-1:4-dione, 6-chloro-, A., II, 84. Phthaleins, adsorption of, by cadmium and mercury sulphides, A., I, 199.

coloured, isomerism of, A., II, 264.

from phenol and naphthalene-1:2-dicarboxylio acid, and their di-acetates and dipropionates, A., II, 222.

Phthalhydrazide, 3-amino-, chemiluminescence of, A., I, 213.

Phthalic acid, β -ethylhexyl ester, toxicity of, for rats, A., III, 61.

salts, determination of, C., 168.

isoPhthalic acid, 4-fluoro-, bis(dialkylaminoalkyl) esters, and their dihydrochlorides, A., II, 135.

4:5-dihydroxy-, I-methyl ester, A., II, 162. Phthalic anhydride, determination of, in alkyl

resins, C., 123.
reaction of, with o-phenylenediamine, A., II,

Phthalide, 4:6-dibromo-3-hydroxy-, A., II, 221. 3-hydroxy-, and its methyl and ethyl ethers, and 3-acetate, A., II, 221.

Phthalimide, mercuripurine derivatives of. A., II,

8-ω-Phthalimidodecylamino-6-methoxy-

quinoline, and its hydrochloride, A., II, 56. Phthalimido-aδ-diacetoxyhutane, 8-bromo-. A., II, 143.

8-β-Phthalimidoethyl-6-methoxyquinoline, II, 56.

 α -Phthalimido- γ -methoxy- β -propylmercuritheophylline, A., II, 244.

5-y-Phthalimidopropylamino-(N-6'-methoxy-8'quinolyl)-7-methoxyacridine, 2-chloro-, A., II, 56. 8-y-Phthalimidopropyl-y-aminopropylamino-6methoxyquinoline, dihydrobromide, A., II, 56. Phthalmorpholinomethylimide, A., II, 239. Phthalo-ω-bromodecylimide, A., II, 56. Phthalo-y-(y'-bromophenylpropylamino)propylimide hydrobromide, A., II, 56. Phthalocyanines, thermal expansion of, A., I, 55. Phthalo-y-(y'-phenoxypropylamino)propylimide hydrobromide, A., II, 56. o-Phthaloylamidoacetophenone, A., II, 81. 3:4-Phthaloyl-ms-benzaeridan, A., II, 60. 3:4-Phthaloyl-ms-benzacridan, 2-hydroxy-, A., II. 61. 3:4-Phthaloylbenzo-ms-benzacridans, A., II, 61. 1:2-Phthaloyl-4:5:8:9-dibenzo-3:10-dihydro-3:10-diazapyrene, A., II, 61. 5:6-Phthaloyl-2:4-dimethylquinoline, and its quinol diacetate, A., II, 235. 1:2-Phthaloyl-4:5:8:9-dinaphtho-3:10-dihydro-3:10-diazapyrenes, A., Il, 61. Phthalylsulphathiazole, toxicity of, A., III, Phycomyces blakesleeanus, growth of, in agar, A., III, 290. Phyllodecta vitellinæ, larvæ, salicylaldehyde secretion by, A., III, 745. Phylloporphyrin, hydroxy-, methyl ester, A., II, a-Phylloquinone. See Vitamin-K₁.

Phymatotrichum omnivorum, carbohydrase activity and carbon utilisation of, A., III, 692. nitrogen utilisation by, A., III, 219. Physarum polycephalum, effect on, of environ-ment changes, A., III, 220. freezing point of protoplasm of, A., III, 219. Physics, nuclear, photography in, A., I, 51. stochastic problems in, A., I, 164. surgeon and, A., III, 258. Physical constants of Δ^a -olefines and n-paraffins, A., II, 177. fitness, effect on, of dietary protein in hot environment, A., III, 670. measurements of college women, A., III, 4. properties, constitution and, A., I, 53. types, factorial study of, A., III. 572. psychoses in relation to, A., III, 787. Physico-chemical processes, models of, A., I, 64. Physostigmine. See Eserine. Phytadiene, degradation of, A., II, 376. Phytic seid, ferric salt, determination in, of iron, iodometrically, C., 65. iron-phosphorus ratio in, C., 191. iron absorption and, A., III, 346. Phytol, degradation products of, A., II, 376. optically-active, A., II, 31, 209. -)-n- and -iso-Phytols, A., II, 31. Phytomonas stewartii, mutation of, by X-rays, A., III, 222. Phytomonas syringæ papulans, A., III, 616. Phytomonas tumefaciens, chemistry of, A., II, 180. growth substance formed by, in culture media, A., III, 855. polysaccharide from, A., II, 326. Phytomonic acid, and its hydrazide, A., II, 181. Phytoncides, bactericidal properties of, A., III, 370. effect of, on protozoa, A., III, 293. on the organism, A., III, 362. Phytophthora infestans, action of thiamin on, A., III, 841. Phytophthora phaseoli, nitrogen requirement and

vitamin deficiency of, A., III, 69.

Picolines, sulphonation of, A., II, 143.

a- and β-Picolinediazidocopper, A., I, 290.

C., 89.

100.

Phytoplankton, population of, measurement of,

Picric acid, iso- and poly-morphism of, A., I,

Picea glauca, growth of, in light, A., III, 515. Pickeringite, A., I, 294.

4- γ -2'-Pipecolino-n-propylamino-6-methoxy- . Picrotoxin, brain respiration inhibited by, A., III, 331. quinoline, A., II, 379. treatment with, of barbiturate poisoning, A., Piperazine, alkylation of, by alkylene oxides, A., III. 760. II, 24. Piezochemistry, A., I, 105. derivatives of, A., II, 24. N-mono- and unsymmetrical di-substituted, Pigs, development of, effect of sex on, A., III, A., II, 235. 626. determination of, C., 23. Essex, external characteristics in, A., III, 572. Piperazinediazidocopper, A., I, 290. Piperidine, derivatives, anæsthetic potency of. See under Anæsthetics. growing, nicotinic acid requirement of, A., III, 354. low-manganese diet for, A., III, 352. 3-substituted, synthesis of, A., II, 272. twins in, conjoined, A., III, 235. young, mortality in, A., III, 108. Piperidine-3-carboxylamide, 1-nitroso-4-amino-Sec also Swine. and its hydrochloride, A., II, 273. Pig products, determination in, of riboflavin. ω-Piperidinoacetophenoxime, A., II, 352. 2-Piperidinoacetylfuran, and its hydrochloride, C., 34. A., II, 172. Pigments, carotenoid, preparation and absorp-10-Piperidinobenz(q)quinoline, A., II, 275. tion spectra of, A., II, 74. cellular, developing, chromatophore migration α -Piperidino- β -dibenzylamino- β -phenylethyl as response to influence of, A., III, 571. methyl ketone, A., II, 279. corrosion-inhibitive, evaluation of, laboratory, α -Piperidino- β -dibenzylammo- β -phenylpropiophenone, A., II, 279. α -Piperidino- $\beta\beta$ -dimethylacrylic acid, ethyl ester, C., 197. determination of, in enamels and paints, C., and its platinichloride, A., II, 323. 26. 2-Piperidinodiphenyl, 3:5-dinitro-, A., II, 363. in paints, C., 172. α-Piperidinodiphenylacetic acid, A., II, 77. formation of, in guinea-pigs, genetics of, A., 3-Piperidino-1:1-diphenylindane, and its hydro-chloride, A., II, 193. III, 388. iron, isolation of, from human red hair, A., β-Piperidinoethylfuran, 2-α-hydroxy-, and its hydrochloride, A., II, 172. III, 117. organic, detection of, C., 172. plant. See under Plants. β-Piperidinoethyltetrahydrofuran, 2-a-hydroxy-, urinary. See under Urine. and its derivatives, A., II, 173. Pigmentary effector system, A., III, 348. a-Piperidmo- β -cyclohexylamino- β -phenylpropiophenone, A., II, 171. Pigmentation of cave animals, A., III, 260. Pike, Northern. See Esox lucius. β -Piperidino-2-hydroxy-4-methoxypropio-Pills, enteric-coated, examination of, in vitro, phenone hydrochloride, A., II, 272. C., 37. 4-Piperidino-3'-methoxy-5:6-benzoquinoline, A., blood-density II, 347. Pilocarpine, increase in 4-y-Piperidino-6-methoxyquinoline, 379. anæsthetised dogs after, A., III, 134. treatment with, of retinitis, A., III, 461. Pilzcerebrin. See Cerebrin. α-Piperidino-β-6-methoxy-1:2:3:4-tetrahydroquinoline-B-phenylpropiophenone, A., II, 279. Pimanthrene, isolation of, from dehydrogenation products of staphisine, A., II, 206. a-Piperidino-β-6-methoxy-1:2:3:4-tetrahydroquinoline- β -phenylethyl methyl ketone, A., II, 279. Pimelic acid, effect of, on growth of fungi, A., III, 70. Pimelic acid, a-bromo-, diethyl ester, A., II, 305. a-Piperidino- β -N-methylbenzylamino- β -phenylethyl methyl ketone, A., II, 279. a-chloro-, A., II, 353. a-cyano-, diethyl ester, and its dihydrazide. α -Piperidino- β -N-methyl-N- β' -hydroxyethyl-A., II, 91. amino-\beta-phenylethyl methyl ketone, A., II, Pinacols, from p-methoxyacetophenone, A., II, 262. α -Piperidino- β -N-methyl-N- β '-hydroxyethylphenolic, reaction of, with hydriodic acid, A., amino-β-phenylpropiophenone, A., II, 279. 8-Piperidinomethylisoquinoline, 7-hydroxy-, A., II, 367. Pinacolins, phenolic, reaction of, with hydriodic acid, A., II, 367. II, 314. a-Piperidino-β-morpholino-β-phonylethyl methyl Pinacolone, from p-methoxyacetophenone, A., ketone, A., II, 171. β -Piperidino- α -morpholino- β -phenylethyl methyl II, 262. ketone, A., II, 171. Pinane series, syntheses in, A., II, 52. γ -Piperidino- α -phenyl- α -benzyl-n-butyronitrile, α-Pinene, esterification and isomerisation of, A., A., II, 202. II, 301. Pine trees, artificial defoliation of, A., III, 84. β -Piperidino- α -phenylethylamine, and its benzoyl derivative, A., II, 352. gall formation on, by Peridermium, A., III, β-Piperidinopropionitrile, and its picrate, A., II, 855. growth hormones in, A., III, 384. jack, seedling, growth of, effect of niacin and 2-β-Piperidinopropionyl-7-methoxycoumarone thiamin on, A., III, 155.
Ioblolly and shortleaf, leaves, properties of, hydrochloride, and its picrate, A., II, 272. 4-γ-Piperidino-n-propylamino-6-hydroxyin relation to drought resistance, A., III, quinoline, A., II, 379. 307. 10-γ-Piperidino-n-propylphenothiazine, A., II, seedling, germination of, effect of shading and watering on, A., III, 513. N'-y-Piperidino-n-propylsulphanilamide, and its acetyl derivative, A., II, 292. shortleaf, seedling, calcium content and pH of culture media for, A., III, 309. α -Piperidino- β -tetrahydro: $soquinolino-<math>\beta$ phenylpropiophenone, A., II, 171. Pineal glands, differentiation and growth of, A., 2-Piperidone-3-carboxylic acid, ethyl ester, A., III, 92. Pinealoma, relation of, to teratoma, A., III, 669. II, 169. Pineapple plants, distribution of constituents in, 2-Piperidone-5-carboxylic acid, ethyl ester, A. in darkness and light, A., III, 310. II, 169. Piperonylamides, N-substituted, A., II, 260. a- and β -Pinenes, synthesis of, A., II, 52. Piperonyl-n-amylamide, A., II, 260. Pinosylvin, methyl ether, synthesis of, A., II, 191. synthesis of, A., II, 191. Piperonyl-o-, -m-, and -p-bromoanilides, A., II, Pinus, mycorrhizal growth in, A., III, 383. species differentiation in, A., III, 384.

Pinus ponderosa, defoliation of, by pine butter-Piperonyl-m-chloroanilide, A., II, 260. Piperonylethylamide, A., II, 260. Piperonylidenediginigenin monohydrate, A., II, fly, A., III, 87.

Pinus radiata, zinc deficiency in, A., III, 379.

of, A., III, 315.

Pinus sibirica, seeds, constituents of endosperm

231.

II, 78.

6-Piperonylidene-2:2-dimethylcyclohexanone, A.,

6-Piperonylidene-2-methyl-2-ethylcyclohexanone, A., 11, 78.

6-Piperonylidene-2-methylcyclohexanone, A., II,

Piperonyl-n-propylamide, A., II, 260.

N-Piperoyl-N-(or N'-)p-dimethylaminophenyl-N'-(or N-)1-menthylcarbamide, A., II, 106. Pipettes, automatic, C., 51.

filler for, C., 144.

filling and emptying of, device for, C., 94. measuring and mixing, C., 51.

rinser, C., 51.

Pistia, respiration of, in light, A., III, 230. Pisum sativum, germinating and processing of, as palatable source of vitamin-C, A., III, 355

Pitchblende. See Uraninite. Pitocin. See Oxytocin.

Pitressin, effect of, on small blood vessels of rabbit's ear, A., III, 639.

on thirst in diabetes insipidus, A., III, 408. reflex activation of vagus by, heart response to, A., III, 636.

Pituicytes, histogenesis of, in chicks, A., III, 518.

Pituitary, adenomata of, chromophobe, A., III, 187.

anatomy and pharmacology of, in unusual experimental animals, A., III, 590.

anterior, central and peripheral zones of, hormone concentration in, in bovines, A., III, 341.

concretions in, in human embryo and newborn, A., III, 536.

effect on, of adrenocorticotropic hormone in rats, A., III, 408, 732.

of diethylstilbæstrol in immature rats, A., III, 593.

of low atmospheric pressure in rats, A., III, 329.

glycogen-forming action of, on dog liver, A., III, 808.

histology of, after nicotine treatment, A., III, 653.

in rats in relation to mammary fibro-adenoma, A., III, 349.

hormones of, adrenotropic, effect of, on adrenal-cholesterol, A., III, 591.

gonadotropic action of, A., III, 812. lactogenic, content of, in pigeons, A., III,

in women with mammary gland carcinoma, A., III, 251.

relation of, to thyroid in fowls, A., III, 732. store of, in hypophysectomised rats, A., III,

antidiuretic activity of, chloruresis and diuresis for bioassay of, A., III, 109. argentaffin granules in, A., III, 237.

cytologic response of, to iodine intake, rôle of thyroid in, A., III, 464.

development of, and its response to hormonal treatment, in opossum, A., III, 3. in chick embryos, A., III, 158.

in ox, A., III, 3. disturbances of, treatment of, with hormones, A., III, 251.

duplication of, in pig embryo, A., III, 318. effect of, on response of frog's heart and rectus to acetylcholine, A., III, 653.

on systolic blood pressure control in rats, A., III, 730.

effect on, of sodium chloride, A., III, 187. of sulphonamide feeding, A., III, 587.

evolution of, with reference to teleosts, A., III, 1, 731.

function of, in relation to goitrogenesis and thyroidectomy, A., III, 185.

functional and morphological relations of, in bovines, A., III, 808.

gonadotropic activity of, effect of testosterone propionate on, in castrated rats, A., III, 33.

effect of thyroid on, in rabbits, A., II, 466. in lower vertebrates in relation to zinc salts, A., III, 342.

gonadotropic substances of, precipitation and assay of, in urine, A., III, 188.

Pituitary, hormones of, adrenocorticotropic, antagonism of, to action of growth hormone on osseous system of rats, A., III, 732.

effect of, on lymphocyte regulation, A., III, 733.

on lymphoid tissue in relation to serum-proteins, A., III, 733. on osseous system of rats, A., III, 732. work performance of hypophysectomised rats, A., III, 733.

adrenotropic, effect of, on lymphoid tissue, A., III, 109.

corticotropic, preparation of, A., III, 341. gonadotropic, preparation of, from sheep, A., III, 252.

growth, effect of, on glycosuria of depancreatised rats, A., III, 188. opiphyseal cartilage test for, A., III, 591.

lactogenic, recovery of, A., III, 252. purified, effect of, on liver-arginase activity in rats, A., III, 108, 252.

-tropic versus -trophic terminology of, A., III, 341.

in carbohydrate metabolism of eviscerated rat, A., III, 534.

intermedin from, A., III, 252.

irradiation of, for control of puberal bleeding, A., III, 187.

lesions of, chromophobe adenoma-like, in rats, A., III, 664.

lipocaic antagonism to, in fat metabolism, A., III, 108.

mitotic activity of, in female mouse, A., III, 251.

posterior, antagonism between, and insulin, A., III, 536.

effect of fractions of, on human uterus, A., III, 591.

oxytocic principle of, determination of, biologically, C., 176.

preservation of, A., III, 536. reactions of, and related hypothalamic centres to estrogen treatment in hamsters, A., III, 465.

relation of, to adrenals, demonstrated by parabiosis, A., III, 590.

respiratory metabolism in relation to, A., III, 21. stalk transection of, effect of, on gonadotropic function in guinea-pig, A., III, 109.

Pituitary extracts, anterior, action of, on pre-

putial glands, effect of △5-pregnenolone on, A., III, 110.

anti-insulin action of, A., III, 808. ox, diabetogenic and pancreotropic actions of, in rabbits, A., III, 654.

effect of, on renal functions, A., III, 596. gonadotropic, augmentation of, by blood and hæmin, dosage relationships in, A., III, 31.

by hæmin, A., III, 252.

horse's, response of bovine ovary to, A., III,

posterior, cardiae action of, in normal dogs and after denervation of heart, A., III, 188.

contractile response of pregnant human uterus to, A., III, 733.

effect of, on arterial, placental, uterine, and venous pressures in pregnant women, A.,

III, 553.
"old," diuretic action of, in man, A., III, 536.

oxytocic and pressor principles of, separation of, A., III, 733.

treatment with, of dystocia due to uterine inertia in labour, A., III, 809.

ultra-filtration of, corticotropin obtained by, A., III, 466.

Pituitary products, production of, A., III, 653. Pituitrin, effect of, on milk and milk fat secretion, A., III, 408.

response of uterus to, after alkalinisation, Å., III, 733.

shock from. See under Shock.

treatment with, of post-partum period, A., III, 429.

Pivalazide, isolation and degradation of, A., II,

Placenta, calcified thrombus in, in women, A., III, 31.

carotene and vitamin-A resorption from, A., III, 198.

cytology and histology of, trophoblast of, in man and monkey, A., III, 447. in eclampsia and nephritic toxemia, A., III,

469.

manual removal of, blood transfusion and anuria after, A., III, 170.

metabolism of, in women, A., III, 344.

pressure in, effect on, of ergometrine, oxytoxin, and pituitary extracts, in pregnant women, A., III, 553. visualisation of, by X-rays, A., III, 837. Placentography, X-ray, fallacies in, A., III, 686.

Plagioclase, descricitisation of, A., I, 70.

inclusions of, in orthoclase, A., I, 208.

Plague, sylvatic, in ground squirrels in Central California, A., III, 304.

transmission of, by fleas, A., III, 507. Planck constant, values for, A., I, 186.

Planets, nature of, A., I, 114.

Plankton, black and white, in fresh- and sea-water, A., III, 693.

Plants, absorption and transpiration in, A., III, 307.

mineral-salt, A., III, 307.

agricultural, copper, manganese, and zinc in, A., III, 314.

alkaloids and cyanogenetic glucosides in, in relation to soil acidity, A., III, 154.

aluminium-poisoned, phosphorus precipitation in, A., III, 514.

ammonia- and nitrate-nitrogen in, and their physiological action, A., III, 309. amylase in, effect of chlorides on, A., III, 366.

angiosperm, cuticle in, A., III, 307.

anion-cation balance in, effect of ethersoluble organic acids on, A., III, 441.

aquatic, Trout lake, Wisconsin, A., III, 154. Argentine, constituents of, A., III, 316. titanium in, A., III, 443.

bacterial pathogens in, classification of, A., III, 436. boron deficiency in, A., III, 378, 379.

breeding of, polyploidy in, A., III, 381. carotenes in, A., III, 516.

carotene extracts of, A., III, 316. cation absorption by, in soils, A., III, 853. chlorosis of, iron, effect of pyrrole derivatives on, A., III, 515.

culture of, equipment for, C., 89. detection in, of elements, spectrographically, A., III, 707.

determination in, of alkaloids, C., 36. of boron, C., 40, 90.

of molybdenum, C., 139. of phosphorus, C., 40.

diploid and tetraploid, physiology of, A., III, 313.

embryo, nitrogen metabolism of, A., III, 82. synthesis by, A., III, 705; C., 189.

flower initiation and metabolism in, A., III, 781.

flowering, buds, X-ray irradiation of, A., III, 313.

growth of, effect of vitamin- B_1 on, A., III,

growth and flowering of, effect of light and temperature on, A., III, 230.

foliar diagnosis of, A., III, 309.

forage, manganese in, effect of calcium and phosphorus on, A., III, 378.

formation in, of alkaloids, cyanogenetic glucosides, and sulphur compounds, A., III, 853.

fossil, preservation of, in relation to coal formation, A., I, 136.

fumariaceous, alkaloids of, A., II, 87. germination of, and seedling growth, A., III,

green, antibacterials in, A., III, 443. protein coagulate from, carotene assimilation from, A., III, 422.

transamination in, A., III, 310

and

breaking strength

Plants, growth apices of, composition of, in relation to light, A., III, 780. growth of, auxins in, A., III, 782. effect on, of magnesium and minor element deficiencies, A., III, 228. of mannose, A., II, 185. of minor elements, A., III, 231. of X-rays, A., III, 363. of sulphanilamide and other sulphur compounds, A., III, 382. elements essential to, and their antagonism to toxic elements, A., III, 309. in sand cultures, A., III, 440. growth substances for, A., II, 182. growths on, due to carcinogenics and growthsubstances, A., III, 382. halophytic, hydrophytic, and xerophytic, A., III, 227. high-altitude, photosynthesis in, A., III, 154. high-region, Pamir, vitamin-C in, A., III, 383. higher, growth and nutrition of, in relation to pH, A., III, 440. nutrition of, molybdenum in, A., III, 379. vacuoles in plastids of, A., III, 705. hormones for, A., III, 86. infection of, by viruses, A., III, 314. inheritance of quantitative characters in, A., III, 783. injury to, by low temperatures, A., III, 84. irradiation of, with reference to etiolation, A., III, 229. leaf and stem growth of, effect of light on, A., III, 854. leaves. See under Leaves. living, pectic substances in, and their transformation, A., III, 442. metabolism of nutritive elements in, A., III, 623. mineral deficiency in, A., III, 88 mucilage from, fermentation of, C., 90. mutations of, produced by X-rays, A., III, 85. nutrition of, ascorbic acid in, A., III, 314. boron requirements for, in relation to boron-calcium balance, A., III, 378. pH in, A., III, 154. in artificial cultures, A., III, 567. oxygen in, A., III, 567. potassium in relation to boron and calcium in, A., III, 378. old, d-peptidase in, A., III, 690. ovule development in, stimulation of, A., III, 782. photochemical action in, A., III, 230. photosynthesis in, measurement of, A., III, 155. pigments of, anthochlor, A., II, 270. effect of shade and sun on, A., III, 312. formation of, in drought, A., III, 229. poisonous, Australian, A., III, 316. polarity of, A., III, 306. polyploid, carbon assimilation and respiration of, A., III, 706. physiological differences in, A., III, 381. pigment content of, A., III, 384. polyploidy in, A., III, 854. and X-ray dosage, A., III, 85. proteases of, A., III, 217. proteins of, dissociation of, by incipient drought, A., III, 780.
respiration of, effect on, of light, A., III, 230.
of radiation, A., III, 852. rotenone-containing, evaluation of, C., 189. salt tolerance of, A., III, 309. samples, grinding of, mineral contamination in, C., 139. sand culture of, equipment for, A., III, 516. seedling, etiolated, amide metabolism in, A., II, 35; A., III, 83. growth of, effect of low-intensity light on, A., III, 313. starch in, effect of growth substances on, A., III, 782. sulphur in, A., III, 153. translocation in, A., III, 307. tumours in, A., III, 442. formation of, A., III, 383. vegetable, effect on, of ultra-violet light, A.,

III, 854.

Plants, vitamin-K in, A., III, 515. volatile substances in, A., I, 97; II, 31, 103, 136, 263; III, 156; C., 71, 151. water economy of, in relation to atmospheric humidity and temperature, A., III, 307. water loss from, effect of hormone treatment on, A., III, 782. Plant ash, analysis of, C., 40. spectrograph for, C., 45. spectrographically, C., 139. Plant cells, death of, by freezing, A., III, 306. enzyme action in, and its alteration, A., III, 312. ring, absorption and accumulation of solutes in, A., III, 153. living, permeability of, to water, A., III, 704. permeability of cellulose walls of, A., III, 153. protoplasmic surfaces of, A., III, 306. sucrose conversion into starch in, A., III, 379. vacuoles, composition and staining of, A., III, 153. significance of, A., III, 153. water relations in, A., III, 227. Plant extracts, carotenoid, constituents of, C., 90. determination in, of creatinine, C., 189. Plant materials, chemistry and biochemistry of, A., II, 252, 303. determination in, of ascorbic acid, C., 90. of cellulose, C., 189. of nitrogen, phosphorus, and potassium, C., 189. oxidation of, with nitrobenzene, A., II, 176. pectin in, A., III, 83, 316. respiring, carbon dioxide output of, C., 189. Plant roots. See Roots. Plant sap, ascent of, A., III, 377. calcium and sulphur content of, from autoclaved and frozen tissues, A., III, 440. determination in, of organic acids, C., 90. Plant tissues, analysis of, by use of plant juice, C., 139. culture of, a A., III, 377. and "vegetable dynamicks," cystine hydrolysis and sulphur fractionation in, A., III, 567. determination in, of ascorbic and dehydroascorbic acids with 2:4-dinitrophenylhydrazine, C., 139. of pH, C., 89. of lignin, C., 93. of organic acids, pretreatment for, A., III, fumarase in, A., III, 232. living, oxygen supply and water intake in, A., III, 227. recovery of fluids from, press for, C., 89. respiratory quotient of, A., III, 83. Plant viruses, genera of, A., III, 703. neutralisation of, by rabbit sera, A., III, 80. Plantago major, pigment development in, A., III, 312. Plasmal, staining of, and its reactions with amines, A., III, 677. Plasmochin, plasmodocidal effect Plasmodium lophuræ, A., III, 56. effect Plasmocytoma, lung. See under Lungs. Plasmodium cathemerium, effect of high temperature on, A., III, 842. Plasmodium gallinaseum, form of, in incubation period, A., III, 220. Plasmodium knowlesi, infection by, immunity to, in rhesus monkeys, A., III, 770. Plasmodium lophuræ, infection by, effect of biotin deficiency on course of, in chicks, A., III, 548. plasmodocidal effect of atebrin, plasmochin, and quinine on, A., III, 56. Plasmoquin, hæmoglobinuria after administration of, A., III, 279. Plastics, abrasion of, photometer for testing, C., 99. fast and slow extension of, A., I, 15. impact testing of, C., 122. relaxation of, C., 123. testing of, by X-rays, C., 96.

Plastic tubing, joining of, to glass, C., 207. Plasticity, relation of, to hardness and damping, Plastometer, Du Pont modified, C., 173. Platinum, colloidal, sols, preparation of, A., I, 125. gas-covered, accommodation coefficients on, A., I, 222. helium accommodation coefficient on, A., I, 199. passivity of, A., I, 42, 105. use of, in the laboratory, C., 197. Platinum alloys with copper, catalytic action of, A., I, 205. Platinum bases, complex salts, isomerism and spectra of, A., I, 265. structure of, A., I, 68, 80. hydroxo-derivatives of, A., I, 91. interchange of hydrogen in, with deuterium oxide, A., I, 19. Platinum tetrachloropentammine, catalytic decomposition of, A., I, 287.

Platinum compounds, divalent, amido- and amino-complexes, absorption spectra of, A., I, 265. nitroso-, complex, A., I, 46. with hydrazine and hydroxylamine, A., I, 184. Platinum organic compounds, complex, with ethylene, A., I, 112. butadiene ethylenediamine Platinum dichloride, A., II, 91. ethylene ethylenediamine dichloride, A., II, 91. Platinum dishes, weight loss of, C., 94. Platinum linkings, A., I, 79. Platinum metals, chlorometallates, absorption spectra of, A., I, 235. Platinum minerals, A., I, 295. Platypæcilus, pigments in, gene-controlled, chemistry of, compared with other tropical fishes, A., III, 194. Pleione, spectrum of, A., I, 161. Plethysmograph, ink-working finger, C., 93. Pleura, mesothelioma of, A., III, 668. Pleurisy, pain in, relief of, by intercostal nerve block, A., III, 799. Pleuropneumonia, organism related to, electron microscopy of, A., III, 847. Plotosus arab, poison glands in pectoral spines of, A., III, 597. Plum trees, pollen of, A., III, 308. Plumbism, in workers on steel salvage, A., III, 363. See also Poisoning, lead. Pneumocephalus, ventricular, traumatic, A., III, umococci, antigenic relation of, Hæmophilus influenzæ B, A., III, 74. Pneumococci, antigenic relation esterase content of, A., III, 618. growth of, biotin requirement for, A., III, 372. hyaluronidase production by, A., III, 698. infections by, action on of irgafen, A., III, 278. of sulphapyrazine and sulphapyrimidine in mice, A., III, 358. in hypothermia, A., III, 71. oxidation by, of pyruvic acid and sugars, A., III, 75. polysaccharide from, preparation of, A., III, C-polysaccharide, reactions of, with phase serum, A., III, 508. resistance of, to penicillin, A., III, 76. to sulphonamides, A., III, 844.
reversal of "quellung" with, by papain digestion of antibody, A., III, 508.
sulphonamide-resistant, in clinical practice, A., III, 75. origin of, A., III, 147. swelling of, electron microscopy of, A., III, 223. types of, transformation of, by deoxyribonucleic acid fraction, A., III, 508. type I, growth of, effect of carbonic anhydrase water absorption by, measurement of, C., 203. on, A., III, 847.

Plastic mouldings, structure of, C., 74.

Pneumococci, type III, electron microscopy of, A., III, 75.

growth of, choline specificity for, A., III, 618.

nutrition of, A., I, 772.

plasma precipitation by, in relation to sedimentation rate, A., III, 847.

type 27, reactions of, with phase serum, A., III, 508.

vaccine, injection of, antibody formation after, A., III, 223.

Pneumoencephalography, Bacil meningitis after, A., III, 103. Bacillus pyocyaneus

Pneumonia, agent causing, in cats, A., III,

atypical, A., III, 620.

caused by psittacosis-like viruses, A., III, 621.

cold autohæmagglutinins after, producing aerocyanosis, A., III, 791.

epidemiology of, and respiratory disease at Fort Bragg, North Carolina, A., III, 566. treatment of, with human serum, A., III, 702.

chemotherapy of, A., III, 205.

statistics of, A., III, 205.

cinchona alkaloids in, A., II, 174.

interstitial, treatment of, with X-rays, A., III,

lipoid, diagnosis of, by aspiration biopsy, A., III, 176.

mortality from, effect of chemotherapy on, in Glasgow, A., 111, 205.

pneumococcal, treatment of, with sulphamerazine, A., III, 132.

with sulphamezathine, A., III, 828. with sulphapyrazine, A., III, 205.

with sulphapyrimidine, alone and with antipneumoccal serum, A., III, 54.

effect of, on plasma-lipins, A., III, 679. type I, postoperative, prevention of, with sulphapyridine, A., III, 428.

treatment of, in rats, A., III, 132.

urinary constituents excreted during, in dogs, A., III, 744.

postoperative, treatment of, with sulphathiazole, A., III, 428.

primary, atypical, A., III, 511, 566, 777, 778. agglutinins in, A., III, 303.

diagnosis of, agglutination test for, A., IĬI, 438.

outbreak of, in hospital and medical school, A., III, 303.

chloride metabolism and plasma-aminoacid levels in, A., III, 274.

rheumatic, A., III, 508.

susceptibility to, effect of pantothenic acid on, A., III, 548.

treatment of, with sulphamezathine, A., III, 54.

with sulphanilamide and its derivatives, A., III, 205.

with sulphapyrimidine, A., III, 757. with sulphonamides, A., III, 54.

unresolved, bronchography in, A., III, 722.

urinary chloride excretion in, after chemotherapy, A., III, 277.

virus, cat, relation of, to psittacosislymphogranuloma group, A., III, 438. mouse, activation of, by human serum, A., III, 512.

with enteritis, in calves, virus causing, A., III, 375.

Pneumonitis, feline, A., III, 849.

Pneumopericardium, in infant, A., III, 719. Pneumothorax, bilateral, spontaneous, A., III,

investigation of, all altitudes, respiratory function and, A., III, 722.

spontaneous, complicating bronchial asthma, A., III, 723.

Poa pratensis, apomixis and sexuality in, A., III, 231.

Podalyria, alkaloids of, A., II, 354.

Poisons, cobra, effect of, compared with morphine, on unanæsthetised cat, A., III, 135. esterase activity of, A., III, 689; C., 186.

Poisons, cobra, toxicity of, effect of heparin on, A., III, 164.

treatment with, of intractable pain, in cancer, A., III, 834.

fish, A., III, 708.

menstrual, experimental and historical studies on, A., III, 31.

sympathetic, adrenaline and, A., III, 28.

tissue, action of, A., III, 323. viper, Russell, thromboplastic activity of, stability of, in storage, A., III, 10.

Poisoning, amphetamine sulphate, in infant, A., III, 760.

arsenie, effect of sodium ascorbate on survival after, A., III, 684.

aspirin, A., III, 282.

barbiturate, treatment of, with picrotoxin, A., III, 760.

barium, effect of sodium ascorbate on survival after, A., III, 684.

benzedrine sulphate, accidental, A., III, 61. benzene, in women exposed to industrial rubber solutions, A., III, 762.

bromide, A., III, 61. cadmium, A., III, 684.

cantharidin, in South Africa, A., III, 282. carbon tetrachloride, treatment of, with casein digest and methionine, A., III, 743.

carbon dioxide, with reduced oxygen, A., III,

carbonyl chloride from trichloroethylene, A., III, 399.

ethyl alcohol, chemical tests for, A., III, 760. fluorine, A., III, 485. food, A., III, 223.

by hamolytic staphylococci, A., III, 848. due to carriers in war industry, A., III, 848.

galactose, in chicks, A., III, 484. hydrogen sulphide, eye inflammation from, A., III, 430.

lead, diagnosis and treatment of, A., III, 61. effect of sodium ascorbate on survival after, A., III, 684.

from bullet in sphenoid sinus, A., III, 136. late effects of, on mental development, A., III, 246.

See also Plumbism.

magnesium, after magnesium sulphate enema, A., III, 814.

manganese, industrial, A., III, 62.

mercury, effect of sodium ascorbate on survival after, A., III, 684.

methyl alcohol, ocular pathology of, A., III, 24.

retina and visual field changes in, histopathology of, A., 1II, 183.

methyl bromide, A., III, 281. mustard gas, A., III, 214. nitrogen dioxide, A., III, 399. nitroglycerin, A., III, 496.

oxygen, A., III, 399.

phenothiazine, in pigs, A., III, 681. in Sydney, A., III, 57. phosphorus, effect of sodium ascorbate on survival after, A., III, 684.

potassium, electrolyte redistribution in cat heart and skeletal muscle in. A., III, 636. protection of rats from, with deoxycorticosterone and thyroid, A., III, 340.

sodium fluoride, A., III, 214. sulphapyrimidine, pathological changes in,

A., 111, 551.

toluene, A., III, 836.

tri-o-cresyI phosphate, creatinuria due to, effect of vitamin-E on, A., III, 213.

uranium, anti-uranic substance for protection of kidney against, A., III, 212.

effect of, on plasma diodone clearance and renal plasma flow in dogs, A., III, 597. Poisson's ratio, A., I, 146.

Polarisation, concentration, theory of, A., I, 87. Lorentz-, reciprocal, charts of, for equi-inclination Weissenberg photographs, C., 100.

Polariscope, laboratory, improved, C., 100. Polarographic analysis. See under Analysis. Polarography, development of, A., I, 129. oscillographic, A., I, 228.

Poliomyelitis, A., III, 303, 374.

ætiology of, immunity factors in, A., III, 151.

convalescent, pathology of central nervous system of, in man, A., III, 19.

electromyography in, A., III, 800.

in cynomolgus monkeys, A., III, 374, 777. in Middle East troops, A., III, 702.

in relation to immunisation with typhoidparatyphoid vaccine, A., III, 77.

ineffectiveness of ultra-violet irradiation of blood in, A., III, 430. murine, effect on, of pyrimidine derivatives,

A., III, 607. muscle and nerve in, pathologic findings in,

A., III, 800. muscle spasm in, A., III, 400, 528.

muscular disorders in, A., III, 724.

paralytic, biotin, pantothenic acid, riboflavin excretion tests in, A., III, 644.

resistance to, effect of pantothenic acid deficiency on, in mice, A., III, 825.

severity of, in Macaca mulatta, A., III, 225. treatment of, during acute stages, A., III,

with prostigmine, A., III, 644.

vaccine, ultra-violet-irradiated, properties of, A., III, 510.

virus, chlorine and ozone as virucidal agents for, A., III, 79.

detection of, in flies during poliomyelitis epidemics, A., III, 78.

effect of, on bladder of rabbits, A., III, 78. on motor end-plates in monkey, A., III, 78.

extraction of, A., III, 375.

in central nervous system of paralysed mice, A., III, 151.

in chicken cords, fæces of dogs, fruit, and well water, A., III, 79.

isolation of, from urine, A., III, 78.

SK murine, heat-inactivation of, A., III, 566.

neutralisation of, by human sera, A., III,

purification, sedimentation, and sero-logical reactions of, A., III, 565. physical chemistry and ultramicroscopy of,

A., III, 777. resistance to, of cotton rats, A., III, 438.

of mice, in relation to nutrition, A., III, 849.

serological relation of, with encephalomyelitis virus, A., III, 564. susceptibility to, effect of thiamin intake

on, in mice, A., III, 566. in vitamin- B_1 deficiency, A., III, 438.

of monkeys, A., III, 151.
Pollen, atmospheric, A., III, 567.

automobile trap for, A., III, 153. census of, at Cardiff, A., III, 567. constituents of, A., III, 315.

germination and development of, effect of rays on, A., III, 230.

germination and tube growth in, effect of growth substances on, A., III, 442.

smears from, fixative for, A., III, 232.

survey of, in U.S.A., A., III, 153. tubes, chromosomes of, effect on, of X-rays and ultra-violet light, A., III, 430.

fixation and staining of, on cellophane, A., III, 93.

physiology of, in the style, A., III, 306. value of, compared with substitute, A., III, 670.

Polonium, chemistry of, A., I, 133.

Polonium compounds, sexavalent, A., I, 133. Polyalcohols, open chain, oxidation of, in dry

acetic acid, A., II, 210. Polyalkylbenzenes, A., II, 54.

Polyamides, degree of polymerisation, shape, and viscosity of, A., I, 279.

fibres, structure of, A., I, 270.

Polyarthritis, infectious, treatment of, with penicillin, in rats, A., III, 756.

Polybenzylcyclohexanones, A., II, 372. Polyisobutylene, X-ray structure of, A., I, 5. Polycrystals, magnetostriction of, A., I, 271. Polyoyclic compounds, A., II, 103, 136; C., 69. inner-complex, extinction curves of, A., I, 191.

Polycythæmia, effect on, of carbamylcholine, furfuryltrimethylammonium iodide, oxygen, and soya-bean lecithin, A., III,

of "ventriculin," in relation to choline in stomach, A., III, 321.

induced by ascorbic acid, cobalt and other vitamins, in salamanders, A., III, 322. treatment of, with radiophosphorus, A., III, 792.

olycythæmia vera, trovenesection, A., III, 166. Polycythæmia treatment of,

Polydactyly, suppression of, by low temperature, in domestic fowl, A., III, 158.
Polyenes, A., II, 261, 340.

synthesis of, A., II, 363.

Polyene series, A., II, 177.
Polyethylene, X-ray structure of, A., I, 5.
Polyethylene oxides, structure of, A., I, 146.
Polyethyleneimine I, and its derivatives, A., II.

Polyfructosans, ring structure of, and their acctates, A., II, 8.

Polygalitol, oxidation of, with lead tetra-acetate in glacial acetic acid, A., II, 7.

synthesis of, A., II, 2.
Polyisoprenes, A., II, 22, 187.
autoxidation of, A., II, 32, 211. Polyisoprene dichloride, A., II, 188.

Polymerides, amorphous, elastic and electrical properties of, A., I, 280.

electron diffraction by, A., I, 195. branched, gel formation and mol. size

distribution in, A., I, 175. chain, X-ray structure of, A., I, 5, 270. crystalline, melting of, A., I, 219.

divinyl-vinyl, gel formation in, A., I, 15. heterogeneous, thermodynamics of solutions of, A., I, 152.

high, chain configuration and physical properties of, A., I, 61.

elasticity and flow of, A., I, 61.

pH of frozen and thawed solutions of, effect of adsorbed gases on, A., I, 61.

light scattering by, in relation to nonhomogeneity of mol. wt., A., I, 214. molecular arrangement in, with optical anisotropy, A., I, 29. molecular unrolling in, in flowing liquids,

A., I, 36.

mol. wt. of, A., I, 201, 202.

mol. wt. and osmotic pressure of, A., I, 202. organic, concentration and viscosity in solutions of, A., I, 125. properties of, A., I, 65.

solutions, light scattering with, A., I, 175.

theory of, A., I, 201. synthetic, constitution of, A., II, 3.

thermodynamics of solutions of, A., I, 62. linear, structure and viscosity of, A., I, 56. rigidity of solutions of, A., I, 61.

statistical mechanics of cross-linked networks of, A., I, 60.

synthetic, fibre-forming, chemical constitution and colloid structure of, A., I, 248. thermal properties of, A., I, 56.

Polymerisation, A., II, 198. addition, A., I, 65.

catalysts for, A., II, 120. chain, kinetics of, A., I, 252. free radicals in, A., I, 41, 287.

of the Wurster dye type, A., II, 11. kinetics of, A., I, 65, 179, 227. of low-molecular substances, A., I, 248. rate-determining reaction in, A., I, 157.

ring, kinetics of, A., I, 106. size distribution curves in, A., I, 227.

vinyl, optically-active acyl peroxides as catalysts for, A., II, 15.

Polymethine dyes, A., II, 216.

Polymorphism, dielectric constant and, A. I,

Polyneuritis, acidosis as cause of, in birds, A., III, 547. infections, acute, A., III, 22.

Polyneuritis, of unknown ætiology in childhood, A., III, 643.

Polyoxymethylenes, effect on, of mechanical pulverisation, A., II, 121. structure of, A., I, 146. Polycyclopentyls, A., II, 187.

Polypeptidase, amino-, secretion of, from duodenal and pyloric mucosa after secretion injection in cats, A., III, 192.

Polyploids, production of, incompatibility sieve for, A., III, 319.

Polyploidy, colchieine-induced, A., III, 85, 231.

in plants, A., III, 313. mitosis in, in relation to X-ray dosage, A., III,

Polyporus basiliaris, biology of, A., III, 367. Polyporus brumalis, culture of, A., III, 768. Polyporus rheades, biology of, A., III, 367.

Polyisopropylbenzenes, A., II, 133, 136, 155, 156.

Poly-reactions, A., I, 65. Polyric oil, immersion, A., III, 790.

Polysaccharides, bacterial, hæmorrh producing, effect of injection of, hæmorrhagetumour bearing mice, A., III, 666.

copper complexes of, optical activity of, A., II, 326.

hydroxylation of, by p-toluenesulphonyl chloride and triphenylchloromethane, A., II, 153.

methylated, end group determination in, A.,

II, 361; C., 167. serological properties of, synthesised by Leuconostoc bacterial enzymes, A., III, 437.

synthesis of, by bacteria, A., III, 696.

Polystyrene, degradation of, by heat, A., I, 227.

felted and netted structures of, A., I, 29, 144. fractions, osmotic pressure and viscosity of, A., I, 125.

precipitation of, from solution, A., I, 59. transition point of, A., I, 274. Polysulphanilamides, A., II, 74.

Polysulphones, stabilisation of, towards heat, A., II, 150.

Polythionic acids. See under Sulphur. Polyuria, in hypertensive rats, A., III, 328. induced by deoxycorticosterone acetate, A.,

III, 535.

Polyvinyl alcohol, fate of, intraperitoneally injected in rats, A., III, 685.

or mounting and specimens, A., III, 6. and cleaning biological X-ray structure of, A., I, 5. structure of, A., II, 1.

Polyvinylidene chloride, X-ray structure of, A., I, 5.

See Pontocaine, anæsthesia with. under Anæsthesia.

Poplar trees, yellow, buds and twigs of, composition of, in dormancy, A., III, 310. Population, Indian, problem of, A., III, 259.

Populnetin in Indian cotton flowers, A., III, 384.

Porencephalic cyst. See under Cysts. Porencephaly, A., III, 332.

Pork, thiamin and riboflavin content of, effect of thiamin intake by pig on, A., III, 45.

Porosity of sheet materials, (P.), C., 120. Porous substances, magnetic properties of, A., I, 273.

Porphins, thermal expansion of, A., I, 55.

Porphyrin, urinary, output of, effect of atebrin on, in rats, A., III, 359.

mesoPorphyrin, hydroxy-, benzoyl derivative, dimethyl ester, A., II, 381.

Potassium, isotopes, in Pacific kelp and in rocks of varying age, A., I, 75. metabolism of. See under Metabolism.

vapour, spectrum of, absorption, A., I, 25.

continuous, A., I, 49.

Potassium compounds, action of, cardiac arrest due to, A., III, 170. on frog muscle, influence of temperature on,

A., III, 554.

in myosin, A., III, 17.
purification of, A., I, 45.
treatment with, of irregular heart action, A., III, 170.

Potassium salts, electrical conductivity of, in aqueous-alcoholic solution, A., I, 18. protective effect of, in anæsthesia, A., III, 833.

Potassium aluminium sulphate, supersaturated solutions of, nuclei formed in, A., I, 122.

arsenate, use of, as indicator in chloride titration, C., 64. azidocuprates, A., I, 182.

bromate, electrical conductivity of, A., I, use of, in bread manufacture, C., 80.

bromide, equilibrium of, with sodium bromide and water, A., I, 63.

bromide, fluoride, and iodide, equilibrium of, with sodium bromide, fluoride, and iodide, A., I, 177.

carbonate, equilibrium of, with calcium carbonate, and with silicates, A., I, 43. with sodium carbonate and water, A., I, 155.

chlorate, equilibrium of, with potassium and sodium chlorides and sodium chlorate, A., I, 128.

perchlorate, determination of, in 10% sulphuric acid, C., 3.

chloride, concentration distribution of, in mixtures of, with lithium chloride and

potassium iodate, A., I, 156. electrical conductivity of, in solution, temperature coefficients of, A., I, 155.

equilibrium of, with potassium and sodium chlorates and sodium chloride, A., I, 128. photodichroism of coloured laminæ of, A., I, 241.

transference number of chlorine ions in, effect of dialysis on, A., I, 281.

chromate, parachor of, A., I, 214.

reaction of, with indium sulphate, A., I,

supersaturation in solutions of, A., I, 276. use of, as indicator in chloride titration, C., 64.

dichromate, aqueous solutions of, colour of, C., 94.

parachor of, A., I, 214.

supersaturation in solutions of, A., I, 276. chromyl chloride, preparation of, A., 183.

fluoride, diffusion of, into water, A., I, 197. equilibrium of, with lithium and sodium fluorides, A., I, 38.

hydroxide, determination in, of sodium, C., 154.

reaction of, with chlorine and hydrogen peroxide, luminescence of, A., I, 116. iodate, concentration distribution in mixtures

of, with potassium chloride, A., I, 156. standard solutions of, stability of, C., 93. iodide, effect of, on skeletal tissues of growing

mice, A., III, 517. electrical conductivity of, in ethylene-

diamine, A., I, 129.
reaction of, with substituted ethylene dibromides, A., I, 226.

solutions, A., I, 12. solubility of, in

permanganate, burette for, C., 51.

oxidation of organic compounds by, A., I, 41.

reaction of, with hydrogen sulphide, A., I, 232.

molybdates, composition and properties of, in relation to pH, A., I, 231.

nitrate, reaction of, with charcoal, A., I, 110. nitrite, pure, preparation of, A., I, 82. silver carbonate, crystal structure of, A., I,

145. sulphate, crystal lattice of, anion rotation in, A., I, 57.

equilibrium of, with ammonium sulphate

and water, A., I, 86. formation of, catalytically, from chlorides, A., I, 288.

supersaturation in solutions of, A., I, 276. tellurite, reaction of, with hypophosphites and phosphites, C., 159.

thiogermanate, preparation and properties of, A., I, 45.

A & C-K*

in, A., III, 738.

Potassium organic compounds :-Potassium tert .- amyloxide, use of, for alkylation of acetoacetic ester and its substitution products, A., II, 181. benzyloxide, hydrolysis by, of sodium alkyl sulphates, C., 166. cyanonickelite, magnetic properties of, A., I, 273. ferricyanide, decomposition of hydrogen peroxide by, A., I, 205. supersaturation in solutions of, A., I, 276. viscosity of solutions of, in relation to concentration, A., I, 220. ferrocyanide, supersaturation in solutions of, A., I, 276. triphenylmethide, preparation of, and use of, in condensation, A., II, 322. Potassium detection and determination:
detection of, microscopically, by by their crystalline picrolonates, C., 105. determination of, by cobaltimetric method, C., 57. in body fluids, C., 92. in fertilisers, C., 40, 188. in fruit and fruit products, C., 31. in minerals and solutions, C., 5. in plant materials, C., 41, 189. microbiologically, C., 190. photometrically, C., 3. wet mineralisation in, C., 154. Potassium effect, model of, A., III, 284. Potatoes, ascorbic and dehydroascorbic acid distribution in, A., III, 48. ascorbic acid and oxidation in, A., III, 314. blackening of, effect of thiourea on, A., III, carbohydraso activity in, A., III, 312. cooked and raw, feeding of, to laying pullets, A., III, 265. cut, healing of, A., III, 439. discs, metabolism and respiration of, A., III, 82. salt uptake by, A., III, 153. f.p. of tissues of, A., III, 153. growth substances in, A., III, 706. proteins of, nutritive value of, for pigs, A., III, 123. respiration of, and ascorbic acid formation, A., III, 228. shoot development in, effect on, of naphthoxyand naphthyl-acetic acids, A., III, 782. storage of, water relations during, A., III, 377. sugar content of, effect of carbon dioxide on, Ä., III, 83. tyrosinase in, which blacken on boiling, A., III, 285. vitamins-A and -C in, A., III, 228 vitamin- B_1 content of, A., III, 269. wound reactions of, A., III, 439.

Potato plants, boron deficiency in, A., III, 379. leaves, mineral constituents of extracts of, A., III, 82. Potato virus X, combination of, with pepsin and trypsin, A., III, 690. Y, nucleoprotein of, A., III, 703. Potential, contact, at water phases in meteorology, A., I, 87. diffusion, in electrolytic solutions, A., I, 129. electrostatic, in charge layer systems, A., I, membrane, A., I, 36. of electrochemical systems, A., I, 129. oxidation-reduction, A., I, 203. electrolytic control of, A., III, 222. redox, determination of, electrode vessel for, C., 204. thermodynamic, in multicomponent systems, A., I, 155. Potentilla anserina and argentea, phytochemistry of, A., III, 707. Poultry, White Leghorn, single-comb, inheritance of size in, A., III, 572. See also Fowls, Hens, etc. Powders, dispersoid, A., I, 172. effect of heating of, in gases, on surface properties, A., I, 173. fineness of, measurement of, C., 54. fritted, structure of, A., I, 146.

Powders, grain distribution and properties of, in Pregnancy, nutrition in, A., III, 41, 264. relation to gas pressure in production, A., effect of, on condition of infant at birth, A., I, 232. III, 417. osteomalacia in, A., III, 488. mineral, suspensions of, in bitumen, etc., ovarian, associated with endometriosis in C., 208. same organ, A., III, 111. primary, A., III, 810. particle size distribution in, C., 54. particle size distribution and specific surface of, apparatus for determining, C., 144. tests with, Friedman, A., III, 410. removal from, of air, C., 51. pain in, abdominal, A., III, 738. plasma-vitamin-A during, A., III, 168. in syphilitic cases, A., III, 44. specific surface determination of, C., 208. talcum, glove, granuloma from use of, A., III, prolongation of, after corpus luteum extract testing of, for explosion risks, C., 208. administration, A., III, 739. Powder post borer. See Lyctus brunneus. prolonged, in macaque, A., III, 627. Praseodymium ions, radiation fields of, in salt shortening of, effect of environmental stilbæstrol on, in lactating rats, A., III, crystals, A., I, 73. spectrum of, arc, A., I, 113. supervision of, in factory workers, A., III, 283. 109. Precipitates, anodic, chemistry and structure of, A., I, 40, 42. spectra of, absorption, ultra-violet, A., I, 265. tests for, antuitrin-S skin, A., III, 738. Precipitation of high-mol. wt. substances, A., I, frog, failure of menopausal urine concentrates to induce egg extrusion in, A., III, Precipitator, electrostatic, portable, C., 103. Precipitins, quantitative titration of, in antigen-812 histidine, A., III, 111. antibody systems, A., III, 152 Hogben, A., III, 410. Pre-eclampsia, cedema in, A., III, 719. hormone, use of rat in, A., III, 594. renin in blood in, A., III, 576. in chorioncpithelioma and hydatid mole diagnosis, A., III, 470. six-hour, A., III, 594. treatment of, with cestrogens, A., III, 736. urinary cestrogens in, effect of Veratrum viride on, A., III, 189. skin, A., III, 811. Pregnancy, anæmia of, A., III, 575. sickle-cell, A., III, 792. two- and six-hour, A., III, 470. without endometrial decidua in ectopic pregnancy, A., III, 470. toxemia of, A., III, 738. blood examinations in, A., III, 165. blood-phosphatase in, as indication of twins, A., İII, 394. adrenals and thyroid in relation to, A., III, blood-urea, scrum-protein, and uric acid in, in classification of, A., III, 111. Bantu women, A., III, 718. hypertensive, A., III, 174. calcium, iron, nitrogen, and phosphorus balances in, in women, A., III, 678. late, diet in relation to, A., III, 738. calcium, nitrogen, and phosphorus meta-bolism in A., III, 470. lead mobilisation after, A., III, 738. nephrotic, intravenous amino-acids in, A., III, 475. cyanosis in, due to sulphhæmoglobinæmia, A., placenta in, A., III, 469. III. 523. dark-adaptation time in relation to dietary peripheral circulatory collapse in, A., III, vitamin-A in, A., III, 486. double ova, in which Rh + twin developed erythroblastosis, A., III, 633. placenta in, A., III, 410. pyelonephritis in relation to, A., III, 258. recession of, after intrauterine death of duration of, in mustelids, A., III, 447. twin, A., III, 812. early, test for, anterior pituitary, A., III, 410. urea clearance and urine volume in, effect of veratrone on, A., III, 659. ectopic, endometrial phase and Friedman test in, A., III, 471. effect of, on experimental hypertension, A., vascular disease after, A., III, 16. vitamin- B_1 deficiency as cause of, A., III, III, 720. 486. effect on, of calcium deficiency, in rats, A., III, venous circulation in lower extremities in, A., 266. III, 328. of fever therapy, A., III, 817. electrocardiographic findings in, relation of vitamin-A in, A., III, 486. weight changes during, A., III, 234, 410. See also Childbirth, Labour, Pseudopregnancy, dietary vitamin- B_1 to, in women, A., III, Puerperium, etc. endometriosis and, A., III, 739. Pregnanediol, determination of, as diagnostic extrauterine, endometrial biopsy in, A., III. aid, A., III, 471. glycuronidate, sodium salt, urinary, enzymic gallstones and, A., III, 816. hydrolysis of, A., III, 254 Pregnane-3(β)-20(α)-diol, dibenzoate of, A., II, heart disease and, A., III, 410. hormonal changes during, in diabetic women, 301. A., III, 739. alloPregnane-3(β):17(α)-diol-21-carboxylactone, hyperthyroidism in, A., III, 406. acetate, A., II, 141. in cases of leukæmia, A., III, 575. in cretinism and myxædema, A., III, 26. Pregnane-3(a):11(a)-diol-20-one, 3-acetate, A., II, 342. infectious diseases during, congenital defects in children after, A., III, 234. Pregnane-3(a):11(a)-diol-20-one, and 12-bromo-, 3-acetate, A., II. 342. length of, heredity and, A., III, 471.
maintenance of, after induction
gonadotropins, A., III, 471. Pregnane-3(β):11(α)-diol-20-one, and 3-acetate, A., II, 342. Pregnane-3(a):12(β)-diol-20-one, monoin hypophysectomised—ophorectomised rats injected with estrone and progesterone, A., III, 344.
in white rat, A., III, 191. di-anthraquinone-2'-carboxylates, A., II, 342. Pregnane-3($\hat{\beta}$):20-diol-11-one, diacetate, A., II, 342.Pregnane-3(a):11(a):20-triol, 3-acetate, A., II, nausea and vomiting of, due to allergic reaction, A., III, 738.
treatment of, with pyridoxine hydrochloride, A., III, 593.
neuro-muscular dystrophy during, calcium gluconate and vitamin-D in, A., III, 470. Pregnane- $3(\beta):11(a):20$ -triol, 3-mono-3:20-di-acetates of, A., II, 342. Pregnane-3:11:20-trione, 12-bromo-, A., II, 342. Pregnan-3(β)-ol-21-al-20-one, and its derivatives, A., II, 52. alloPregnan-3(β)-ol-21-al-20-one, nitrogen balance during, in rats, A., III, 826. normal and toxemic, activity of histaminase derivatives, A., II, 52. Pregnan-3(a)-ol-11:20-dione acetate, A., II, 342.

Pregnan-3(β)-ol-11:20-dione, and its acetate, A., II, 342

Pregnan-12(β)-ol-3:20-dione, anthraquinone-2carboxylate, A., II, 342.

Pregnan-3(β)-ol-20-one, 21-chloro-, and its pyridinium chloride, A., II, 52.

allo Pregnan-3(β)-ol-20-one, pyridinium salt, A., II, 52.

Pregnan-20-one, $3(a):12(\beta)-dihydroxy-3(a):12(\beta)-d$

diacetyl derivative, A., II, 343. 17(a)-3(β)-dihydroxy-, 3(β)-mono- and 3(β)-17(a)-di-acetyl derivatives, A., II, 141. $3(\beta):17(a)-dihydroxy$ alloPregnan-20-one, diacetyl derivative, reaction of, magnesium methyl bromide, A., II, 51.

3(a):21-d: hydroxy-, diacetyl derivative, A., II

 $allo-\Delta^{20}$ -Pregnene- $3(\beta)$:17(a)-diol-21carboxylactone, acctate, A., II, 141.

Pregneninolone, clinical use of, A., III, 810. effect of, on urinogenital system salamanders, A., III, 538.

oral, clinical and laboratory experience with, A., III, 468.

treatment with, of abortion, orally, A., III,

Δ9-Pregnen-3(α)-ol-12:20-dione, acetate, A., II, 342.

Pregnenolone, hydroxy-, acetyl derivative, experiments with, A., III, 416.

△5-Pregnenolone, effect of, on action pituitary extract on preputial glands, A., III,

(?) Δ^3 -Pregnen-12(β)-ol-20-one, anthraquinone-

2'-carboxylate, A., II, 342. Δ^{20} -Pregnine, $3(\beta)$:17(a)-dihydroxy-, and its 3(β) acetate, A., II, 141.

Premenstrual tension, actiology of, nutritional deficiency in, A., III, 467.

Pressor substances, from kidney, A., III, 164.

Pressure, atmospheric, low, effect of, on rats, A., III, 527.

mechanical action of, C., 77.

low, measurement of, with McLcod gauge, C., 95.

measurement of, history of devices for, C., 104.

regulator for, Bailey, C., 95.

Pressure gauge, carbonisation of, C., 52.

Prickly-ash bark, Southern, constituents of, A., III, 856.

Primates, body- and eyeball-size, walking activity, and origin of social life in, A., III, 103.

brain of. See under Brain.

striate area of cortex of, A., III, 25.

β-Primaverose, heptaacetate, preparation of, A.,

Primula officinalis, glucoside of, synthesis of, A., II, 38.

Primulaveroside, acetyl derivative, synthesis of, A., II, 38.

Prins reaction, with propylene, A., II, 245. Prisms, ophthalmic, use of, in ophthalmology,

A., III, 24. Prisoners-of-war, mentality of, A., III, 247.

Procaine, alkalised injections of, for anæsthesia, A., ÍII, 554.

anæsthetic action of. See under Anæsthesia and Anæsthetics.

determination of, in presence of p-amino-benzoic acid, C., 42.

sulphonamide-inhibiting action of, A., III,

Procaine-esterase. See under Esterase. Pro-y-carotene, A., II, 40.

Proechimys, susceptibility of, to influenza viruses, A., III, 849.

Procrythroblasts, azurophilic granulation of, A., III, 450.

Proflavine, bacteriostatic action of, A., III, 221. effect of, on staphylococci, A., III, 773.

in mixtures with sulphonamides, histological effects of, in rabbits, A., III, 277.

toxicity of, on healthy tissue, A., III, 131. Progesterone, absorption of, from oral mucous membrane, A., III, 737.

administration and effect of, A., III, 190.

Progesterone, antifibromatogenic activity of, A., III, 662.

effect of, on guinea-pig uterus, A., III, 190. on liver cells, A., III, 412.

on ovulation and corpus-luteum formation in rats, A., III, 411.

formation of, from cholestenone, A., II, 230. inactivation of, in liver, A., III, 746. intermittent action of, antifibromatogenic

effect produced by, A., III, 746. metabolism of. See under Metabolism.

relaxation of pelvic ligaments induced by, in castrate hysterectomised guinea-pigs, A., III, 345.

sexual receptivity induction œstrogens, in spayed mice, A., III, 594. substances resembling, action of, in ovipositor

test, A., III, 738. treatment with, by pellet implantation, A.,

III, 811. of habitual abortion, A., III, 110 of pelvic endometriosis, A., III, 811.

of uterine and other abdominal fibroids induced by a-estradiol, A., III, 542. uterine hemorrhage induced by, A., III,

Progestogen, metabolism of. under

Metabolism. Prolactin, action of, on corpora Iutea of rats, A.,

III, 344. assay of, crop-sac weight method for, A., III,

Prolapsus uteri, associated with spina bifida and

clubfoot in newborn infant, A., III, 317. Proline, 1-hydroxy-, benzyl ester, hydrochloride of, A., II, 290.

l(-)-Proline, metabolism of. See under Metabolism.

Prolineamide, 1-hydroxy-, A., II, 290. 1-Prolineamide, hydrochloride, A., II, 290. Prolycopene, A., II, 40.

Prolylglycine, 1-hydroxy-, A., II, 290. Prontosil, action of, A., III, 277.

Procestrogens, synthetic, intrasplenic injection of, A., III, 735.

Propadrine, action of, in control of obesity, A., III, 429.

Propadrines, isomeric, physical constants of, A., IĨ, 131.

Propamidine, effect of, on bacteria, A., III, 506. oxidation of substrates by Escherichia coli, A., III, 617.

toxicity of, in treatment of burns, A., III,

treatment with, of kala-azar, A., III, 279. use of, in surgical infections, A., III, 359.

Propane, heat of solution of, A., I, 38. molecular structure and thermodynamics of,

A., I, 213. Propane, α-chloro-ααββ-tetrafluoro-, A., II, 149. av-dichloro-ββ-difluoro-, A., II, 149.

aβy-trichloro-β-βuoro-, A., II, 149. aaβ-trichloro-aβ-difluoro-, A., II, 149. aay-trichloro-ββ-difluoro-, A., II, 149. aβy-trichloro-aβ-difluoro-, A., II, 149. aaβγγγ-hexachloro-aβ-difluoro-, A., II, 149.

fluoro-derivatives, A., II, 149. cycloPropane, anæsthesia with. See under

Anæsthesia and Anæsthetics. circulatory effects from, administered after hæmorrhage, A., III, 360.

derivatives, conjugation in, spectroscopy of, A., II, 187.

effect of, on blood pressure, heart size, and stroke volume in dogs, A., III, 495.

in mixtures with oxygen, explosions of, prevention of, by dilution with helium, A., III, 429.

isomerides of, A., I, 53. cycloPropanes, formation of, from halides, A., II,

Propane-ay-dioldi-β-d-glucoside, β-nitro-, tetraacetate, A., II, 251. p-Propanesulphonylphenylarsonic acid,

p-y-hydroxy-, A., II, 283. cycloPropanol, derivatives of, A., II, 14. Propargyl alcohol, preparation of, A., II, 209. Propens. See Propylene.

 $\Delta\beta$ -Propen- α -ol, γ -chloro-, α - and β -forms of, A., II, 209.

dehydrochlorination of, A., II, 209.

Propenyl ethyl ether, anæsthetic action of. See under Anæsthetics. isoPropenyl vinyl ether, anæsthetic action of.

See under Anæsthetics.

Propenylethynylcarbinol, condensation of, with carbonyls, A., II, 177. rearrangement of, A., I, 286.

Propeptans, oral deallergisation of food allergy with, A., III, 836.

Propiomesitylene, α- and β-chloro-3:5-dinitro-, A., II, 263.

Propionic acid, carboxy-labelled, role of, in liver glycogen production, A., III, 130.

2:6-dichloro-I-phenyl ester, A., II, 128. dissociation constant of, in aqueous acctone

and aqueous sucrose, A., I, 281. $\Delta\beta$ -n-heptinenyl ester, A., II, 29.

production of, in alimentary canal, A., III, 539.

Propionic acid, β -bromo-, ethyl ester, A., II, 168. a-hydroxy-, acetyl derivative, phenyl and o-tolyl esters of, A., II, 217.

β-thiol-, ethyl ester, A., II, 168. 4'-Propionoxynaphtha-2':3'-1:2-chrysene, A., II, 126.

2-Propionylbenzil, A., II, 163.

2-Propionyl-9:10-dihydrophenanthrene, 2-β-bromo-, and 2-β-chloro-, A., II, 11.

a-Propionyl-n-hexoic acid, methyl ester, A., II, 320.

5-Propionylhydrindene, A., II, 329.

4-Propionyl-1-n-nitrophenyl-5-ethylpyrazole-3carboxylic acid, and its ethyl ester, A., II,

4-Propionyl-1-p-nitrophenyl-5-methylpyrazole-3-carboxylic acid, and its ethyl ester, A., II,

2-Propionylphenanthrene, 2-β-bromo-, A., II, 11. O-Propionylsalicylic acid, methyl ester, A., II, 166.

Propiophenone, p-amino-, methæmoglobinæmia after administration of, A., III, 609.

3:5-dichloro-4-hydroxy-, A., II, 128. p-hydroxy-, benzoyl derivative, A., II, 75. Propiophenoneazine, and p-amino, propionyl derivative, and its dihydroazine, A., II, 13.

Propioveratrone-a-sulphonic acid, and its benzylthiuronium and sodium salts, A., II, 372.

o-Propoxybenzoic acid, methyl ester, A., II, 199. β -n-Propoxyethyl p-toluenesulphonate, A., II,

6-n-Propoxynicotinic acid, A., II, 201. 6-Propoxy-2:4:5-trimethylbenzyl

3-hydroxy-, A., II, 200. n-Propyl, free, behaviour of, A., II, 29.

n-Propyl alcohol, β -amino-, benzoyl derivative, A., II, 152. isoPropyl alcohol, detection of, C., 119.

oxidation of, by chromic acid, A., I, 65.

toxicity of, A., III, 836. in relation to ethyl alcohol, fed and externally applied to rats, A., III, 555.

Propyl bismuthate, dihydroxy-, properties and pharmacology of, A., III, 684. a-Propyl Δβ-n-heptinenyl ether, A., II, 30.

180Propyl chloride, condensation of, with m-4-xvlenol, A., II, 367. cycloPropyl methyl ether, anæsthetic action of.

See under Anæsthetics.

p-n-Propylacetophenone, p- β -amino-, p- β -acetyl derivative, A., II, 134. p-y-bromo-, A., II, 134.

N-n-Propyl-N'-allylthiocarbamide, N-y-hydroxy-, A., II, 185.

8-Propylamino-6-methoxyquinoline, 8-y-amino-, dimeconate, A., II, 56. 8-y-chloro-, and 8-y-hydroxy-, A., II, 57.

8-y-Propylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

8-Propyl-y-aminopropylamino-6-methoxyquinoline, 8-y-amino-, trihydrochloride, A., II, 56.

8-y'-amino-, and its salts, A., II, 57. 8-y-180Propylaminopropylamino-6-methoxyquinoline, and its salts, A., II, 57.

- 8-Propylaminoquinoline, 8-y-cyano-, A., II, 57. n-Propylisoamylamine hydrochloride, A., II, 183. 3'-n-Propyl-1'-azobenzene-4-sulphonamide, 4'-hydroxy-, A., II, 257.
- ssoPropylbenzene, p-amino-, hydrochloride of, A., II, 157.
- 1-isoPropylbenzene-2-sulphonamide, 4-nitro-, A., 11, 155. 1-isoPropylbenzene-2-sulphonanilide, 4-nitro-.
- A., II, 155. p-a-Propylbenzenesulphonxanthylamide, A., II,
- 156. 1-isoPropylbenzene-2-sulphonyl chloride,
- 4-nitro-, A., Il, 155. 2-n-Propylbenziminazole 2-a-chloro-, and 2-a-hydroxy-, A., II, 84.
- 2-isoPropylbenziminazole, 2-a-chloro-, and 2-a-hydroxy-, A., II, 84.
- p-n-Propylbenzoic acid, p-β-amino-, and its derivatives, A., II, 134.
- p-y-amino-, and p-y-bromo-, and derivatives, A., II, 134.
- p-n-Propylbenzoyl chloride, p-β-amino-, hydrochloride, A., II, 134.
- p-y-amino-, hydrochloride, A., II, 134. β-p-Propylbenzoylpropionic acid, p-γ'-nitro-, A., II, 297.
- δ-p-isoPropylbenzylamine-a-diethylamino-npentane, A., II, 366.
- N-p-isoPropylbenzyl-N'N'-diethylethylenediamine, A., II, 366.
- N-p-isoPropylbenzyl-N'- β -ethyl-n-butylethylenediamine, dihydrochloride, A., II, 366.
- N-p-n- and -iso-Propylbenzylethylenediamines, and their derivatives, A., II, 366. N-4-180Propylbenzylethylenediamine,
- N-2-amino- and -2-nitro-, dihydrochlorides, A., II, 366.
- N-p-isoPropylbenzylhexamethylenediamine, A., ÍI, 366.
- 1-p-isoPropylbenzylpiperazine, A., II, 366. n-Propyl-n-butylamine hydrochloride, A., II, 183.
- n-Propylisobutylamine hydrochloride, A., II, 183. tsoPropyl-n-butylamine hydrochloride, A., II,
- 4-8-N-180Propyl-N-180butylamino-a-methyl-nbutylamino-6-methoxyquinoline,
- chloride, A., II, 379. 9-n-Propyl-10-n-butylphenanthrene, A., II, 42. β-n-Propylbutyrolactone, β-a'-bromo-, A., II.
- 9-n-Propylcarbazole, 9-y-amino-, and its hydro-
- chloride and picrate, A., II, 291. 3-n- and -iso-Propylcoumarins, 4-hydroxy-, A., II, 166.
- ssoPropyl-m-cresol, formation of, from m-cresol, by condensation reactions, A., II, 366.
- 4-isoPropyl-2-ββ-diisoamylethylhexahydrotolnene, A., II, 41.
- β -n-Propyl- $\beta\beta$ -diisoamylpropionic acid, and its methyl ester and acid amide, A., II, 180.
- β-n-Propyl-ββ-diisoamylpropionic acid, α-cyano-, ethyl ester, A., II, 180.
- β -n-Propyl- $\beta\beta$ -diisoamylpropionitrile, A., II, 180. n-Propyldi-n-butylamine, and its picrate, A., II,
- 1-Propyl-1:2-dihydropyridine-5-carboxylic acid, 2:2-dichloro-, A., II, 201.
- N-n-Propyl-N'- γ -dimethylamino-n-propylcarbodi-imide, and its methiodide, A., II, 185. N-isoPropyl-N'- γ -dimethylamino-n-propyl-
- carbodi-imide, and its methiodide, A., II, 185. N-n-Propyl-N'- γ -dimethylamind-n-propylthio-
- carbamide, and its picrate, A., II, 185. N-isoPropyl-N'- γ -dimethylamino-n-propylthiocarbamide, and its picrate, A., II, 185.
- N-180Propyl-N'-n-dodecylcarbodi-imide, A., II,
- N-isoPropyl-N'-n-dodecylthiocarbamide, A., II, 185.
- Propylene, Prins reaction with, A., II, 245. reaction of, with hydrogen atoms, A., II, 89. Δ^{a} -Propylene, a- and β -bromo-, anæsthetic potency and biochemical effect of, A., III,

832.

and β-chloro-, anæsthetic potency and biochemical effect of, A., III, 832.

- NN'-Propylenediglucamine, A., II, 251.
- N-isoPropylglucamine, A., II, 251. Propylene glycol, effect of, on bacterical spores, A., III, 133.
 - on erythrocytes, A., III, 522.
- for rendering quinidine injectable, A., III, 134. inflammability of, A., III, 557. vapour, bactericidal action of, on micro-
- organisms suspended in air, A., III, 133. 2-Propylcyclohexane, 1:2-dithiocyano-, A., II,
- 154. 2-n-Propylcyclohexanol, 2-a-hydroxy-, and its
- di-3:5-dinitrobenzoate, A., II, 160.
- cis-2-n-Propylcyclohexanol, a-naphthylurethane, A., II, 160.
- N-n-Propyl-N'-cyclohexylcarbodi-imide, A., II, 185.
- N-isoPropyl-N'-cyclohexylcarbodi-imide, A., II, 185.
- a-n-Propylisohexylidenecyanoacetic acid, ethyl ester, A., II, 180.

 N-n-Propyl-N'-cyclohexylthiocarbamide, A., II,
- 185.
- N-isoPropyl-N'-cyclohexylthiocarbamide, A., II, 185.
- n-Propyl-ββ'β''-trihydroxy-tert.-butylamine, y-hydroxy-, hydrobromide, A., II, 323. βy-dihydroxy-, hydrochloride, A., II, 323.
- 150Propylhydroxylamine hydrochloride, A., II, 90.
- 3:3'-Propylidenebis-4-hydroxycoumarin, and its dimethyl ether, A., II, 166. diacetate, and dibenzoate, A., II, 344.
- Propylidene-n-butylamine, A., II, 183.
- αβ-isoPropylidenedioxypentan-ε-ol, A., II, 151.
- 1:2-isoPropylidene-a-fructopyranose, and its 4:5-diacetate, methanesulphonates of, A., II, 92
- *soPropylideneglucosaccharic acid, derivatives of, A., II, 121.
- isoPropylideneglucose, tri-p-benzeneazobenzoate, A., II, 6.
- 3:4-isoPropylidene-β-methyl-1-fucoside, A., II,
- Propylmalonic acid, β -hydroxy-, barium salt, A., 11, 53.
- isoPropylmalonic acid, diethyl ester, alkylation of, with sodium triphenylmethide, A., II, 211. 2-Propylnaphthalene, 1:3-dihydroxy-, and its
- diacetate, A., II, 130. 2-isoPropylnaphthalene, 1:3-dihydroxy-, and its
- diacetate, A., II, 130. N-4-isoPropyl-1-naphthylmethylethylene-
- diamine, A., II, 366. n-Propylcyclopentanol, p-nitro-3:5-dinitro-benzoates, A., II, 219. 1-n-Propylcyclopentanol, and
- 3'-isoPropyl-1:2-cyclopentenophenanthrene, Α., II, 11.
- 2-n-Propylphenanthrene, 2-a-bromo-,
- 2-a-hydroxy-, A., II, 11.
- n-Propylphenothiazine, 10-y-ehloro-, A., II, 353. p-isoPropylphenylacetaldehyde, formation of, by action of potassium permanganate ethylenic compounds, A., II, 222.
- N-β-p-isoPropylphenylethylethylenediamine, A., İI, 366.
- p-n-Propylphenyl ethyl ketone, 2:4-dinitrophenylhydrazone and semicarbazone, A., II, 223.
- isoPropylphthalic acid, hydroxy-, A., II, 206. 1-n-Propylpiperazine, 1-β-hydroxy-, dihydro-
- chloride, A., II, 25. N-n-Propyl-N'-isopropylcarbodi-imide, A., II,
- 185. N-n-Propyl-N'-isopropylthiocarbamide, A., II,
- N-Propyl-2-pyridone-5-carboxylic acid, and its n-propyl ester, A., II, 201.
- diphenylmethylene 3-n-Propylpyrocatechol ether, A., II, 346.
- y-Propylpyrrochlorin, y-y'-hydroxy-, methyl ester, A., II, 311.
- 9-Propyl-1:2:3:4-tetrahydrophenanthrene, its picrate, A., II, 42.
- 1-n-Propyl-1:2:3:4-tetrahydroquinoline, 1-y-amino-, A., II, 291.
- p-n-Propylthiolphenylarsonic acid, p-y-hydroxy-, A., II, 283.

- 5-isoPropyl-m-4-xylenol, A., II, 367.
- Prostate, cancer of, plasma acid phosphatase in, effect on, of stilbæstrol treatment, A., III, 667.
 - treatment of, A., III, 481.
 - with castration, A., III, 196. with stilbœstrol, A., III, 122.
 - enlargement of, benign, pathological anatomy of, A., III, 813.
- epithelium of, metaplasia of, resembling cancer, A., III, 481.

 hypertrophy of, circulatory disturbances in, A., III, 14.
- intraocular implants of, effect of gonadotropic hormones on, in male rabbit, A., III, 31. obstructing, female, A., III, 112.
- post-natal growth changes in, in man, A., III, 625.
- costatic fluid, plasma coagulation and fibringenolysis by, A., III, 539. Prostatic
- Prostatism, treatment of, with diethylstilbœstrol, A., III, 655.
- Prostatitis, granulomatous, A., III, 112.
- Prostigmine bromide, determination of, C., 36. treatment with, of myasthenia gravis,
 - bromidism after, A., III, 214. effect of, on procaine-esterase activity, A., III,
 - treatment with, for delayed menstruation, A., III, 254.
 - of amenorrhoea, A., III, 254.
- of poliomyelitis, A., III, 644. Proteases, bacterial, A., III, 66.
- hydrolysis of muscle-proteins by, A., III, 690. intestinal secretion of, nerves controlling, in
- earthworms, A., III, 647. liver, A., III, 217.
- plant, A., III, 217. Proteins, C., 191.
- ammonia from, possible source of, A., II, 36.
 - analysis of, in serum and urine in renal failure, A., III, 659. qualitative, C., 193.
- animal and plant, amino-acid yield from, after hydrolysis of fat-free tissue, A., III, 349.
- Bence-Jones, determination of, in urine, C., 177.
- blood. See under Blood.
- blood-serum. See under Blood-serum. complex affinity of heavy metals for, A., II,
- complexes of, with chlorophyll, A., III, 784. with heavy metals, A., III, 687.
- with synthetic detergents, A., II, 27.
- constitution of, A., II, 27. cysteine, cystine, and methionine content of, A., II, 148.
- deaminated, viscosity of, solutions of, A., II,
- deficiency of, in surgical patients, A., III, 546. denaturation and sensitisation of, A., III, 312. determination in, of acid and basic groups,
- with dyes, C., 193. of glutamic acid, C., 193.
- determination of, for B vitamins, A., III, 751. in cerebrospinal fluid, A., III, 180; C., 18. in plasma in boys, A., III, 716. dietary, amino-acid mixtures as substitute
- for, A., III, 600. biological value of, A., III, 41.
 - effect of, on hæmoglobin formation, A., III,
 - 41. on liver cytoplasm, A., III, 749. on liver-riboflavin and œstradiol
 - and inactivation by liver, A., III, 658. on physical fitness in hot environments, A., III, 670.
- disaggregation of, crystalline enzyme causing, A., III, 287.
- dynamic effect of, in relation to carbohydrate and fat, A., III, 676.
- fibrous, globular, conversion of, into oriented forms, A., II, 176. reaction of, with acids, A., I, 248.
- flocculation of, by silver salts, effect on, of acidity, A., II, 208.
- flow-birefringence and viscosity of solutions of, A., III, 498.

Proteins, food, biological value of, A, III, 484. oxidation of, and content of liver-glycogen, A., III. 274.

formaldehyde compounds of, A., II, 27. fractionation and separation of, in Tiselius cell, A., III, 431.

fungi. See under Fungi.

growth, field peas as source of, A., III, 124. hoof. See under Hoof.

hydrolysates, determination in, of amino-acids, C., 133.

of purines, C., 133.

in intravenous alimentation, A., III, 484, 546.

hydrolysis of, catalytic effect of metal ions on, A., ĬI, 88.

infra-red scattering, mol. wt., and Tyndall

effect of, A., III, 497. asoluble, analysis apparatus for, C., 94. insoluble, of, amino-nitrogen

lipotropic properties of, A., III, 826.

liver. See under Liver.

low-density, preparation of, from human serum, A., III, 454. metabolism of. See under Metabolism.

milk-. See under Milk.

molecules of, linkage of, A., III, 653. muscle. See under Muscle.

nature and level of, effect of, on fat accumulation in liver, A., III, 749.

nutritive value of, A., III, 197. oat-. See under Oats.

plasma. See under Blood-plasma, potato-. See under Potatoes.

precipitation of, by detergents, A., I, 224; II, 315.

properties of, effect on, of dry grinding, A., II, 67.

proteolysis of, in toxicological analysis, A., III, 362.

reaction of, with I:2-epoxides, A., II, 356. with formaldehyde, A., II, 356.

requirement of, environmental temperature and, A., III, 546.

rice. See under Rice.

serum-. See under Blood-serum.

solubilisation of, in organic media, effect of polyhydric alcohols on, A., I, 224.

solutions of, flow-birefringence and viscosity of, A., I, 103; C., 94.

spectra of, ultra-violet absorption, A., I, 164. structure of, glycine in, A., II, 88.

tissue-. See under Tissues. urine. See under Urine.

yeast. See under Yeast. Proteinuria, tests for, C., 128.

Proteus, taxonomic relationships in, A., III, 223. urense activity of, A., III, 297. Proteus ammoniæ, A., III, 149.

Proteus morganii, nutrition of, A., III, 147. Proteus vulgaris, l-amino-acid oxidase of, A., II,

289; III, 688. Prothrombin, concentration of, in parturient women and their infants, A., III, 717. determination of, in blood, C., 175.

level of, and its relation to age, A., III, 49. plasma. See under Blood-plasma. purified, electrophoresis of, A., III, 717

stabilisation of, in aqueous solution, A., III, 558 Prothrombinopenia, trea menadione, A., III, 717. treatment of, with.

Protocatechualdehyde, diglucosides, fermentative fission of, A., II, 7.

Protohæmochromogen-pyridine, dimethyl ester, A., II, 381.

Protons, emission of, from nuclei with odd charge, A., I. 75. energy of, A., I, 51.

interaction of, with neutrons, caused by spin particles, A., I, 190.

Protoplasm, asymmetry of, and structure of cancer cell, A., III, 121.

coagulation of, A., III, 306. elasticity of, effect of ions on, A., III, 309. inner and outer surfaces of, A., III, 306. X-ray sensitivity and viscosity of, A., III, 557. streaming of, A., III, 306. effect on, of auxin, A., III, 783.

Protoplasm, toxicity to, of heavy metals, A., III,

undifferentiated, leptonic structure of, A., III, 573.

viscosity of, effect on, of bile salts and oleates, Å., III, 81. of protein dissociating agents, A., III, 285.

of X-rays, A., III, 204.

Protoporphyrin, erythrocyte-. See under Bloodcorpuscles, red.

Protoporphyrin, hydroxy-, and its benzoyl derivative, dimethyl esters, A., II, 381. Protozoa, culture of, at room temperature, A.,

III, 693.

effect on, of phytoneides, A., III, 293. Golgi apparatus of, A., III, 712. infection by, of staff of general hospital, A., III, 70.

intestinal, staining of, A., III, 789. pathogenic, effect on, of gramicidin and tyrocidine, A., III, 434.

rumen, cellulose digestion by, A., III, 293. Provitamins-A, determination of, C., 134.

distribution of, A., III, 516. Prunes, hæmoglobin-regenerating properties of,

A., III, 573. Psalliota campestris, enzyme action in, A., III,

367. Psalliota hortensis, growth substances for, A., III, 367.

Pschorr reaction, effect of substitution on, A., II,

25. Pseudoactinium, disintegration of, A., I, 189.

Pseudoaphakia fibrosa, A., III, 531.

Pseudohermaphroditism, A., III, 592.

in twins, A., III, 191. with adrenal cortex hyperplasia, A., III, 191. Pseudohermaphroditismus masculinus, A., III,

Pseudomonas aeruginosa, endocarditis due to, A., III, 300.

seudomonas pyocyaneus, biochemistry and serology of, A., III, 618. gas metabolism of, effect on, of sodium azide, Pseudomonas

A., III, 694.

Pseudomonas riboflavinus, A., III, 561. oxidation by, A., III, 847.

Pseudomonas saccharophila, assimilation by, of dicarboxylic acids, A., III, 561.

Pseudomonas tumefaciens, tumour growth of, effect of apple emanation on, and on host plant growth, A., III, 615.

Pseudomyxoma peritonei, A., III, 113. mucococle of appendix and, A., III, 473.

Pseudo-optics in capillary phenomena, A., I, 58, 223.

Pseudopregnancy, copper-induced, facilitated by pretreatment with æstrogen, A., III, 190. prolongation of, by induction of deciduomata in rat, A., III, 345.

treatment Pseudosclerodermia, vitamin-C and nicotinic acid, A., III, 48. Psilomelane. See Cryptomelane.

Psittacosis, in pigeons, and its transfer to man, A., III, 152

viruses resembling, classification of, A., III, 512.

Psychiatry, A., III, 582.

dermatology in relation to, A., III, 582. in the navv, post-operational strain treatment in, A., III, 582.

military, in Middle East, A., III, 582. Psychogenic fever. See under Fever.

Psychology, physical exercise and, A., III, 62. Psychoneuroses, in military personnel, A., III, 646.

in war time, A., III, 23.

somatic manifestations of, A., III, 582. treatment of.

Psychoses, manic-depressive, tre with electric shock, A., III, 645. mathematical theory of, A., III, 646. pellagra in, A., III, 331. physical types in relation to, A., III, 787.

traumatic, A., III, 215. Psychotherapy, treatment with, of hysterical paralysis, A., III, 331.

Psychotics, paranoid, post-mortem findings in, A., III, 801.

Pterostilbene. See 3':5'-Dimethoxystilbene 4-hydroxy-.

Ptinus tectus, activity of, effect of temperature on, A., III, 260, 261.

diurnal rhythm in, A., III, 261.

life cycle of, effect of humidity and temperature on, A., III, 261. Puberty, and its disturbances, A., III, 253.

female, precocious, constitutional type of, A., III. 467.

Puerperium, weight changes during, A., III, 410. See also Childbirth, Labour, Pregnancy, etc. Pullets, laying, feeding potatoes and sugar beet to, A., III, 265.

mineral metabolism of, A., III, 266.

See also Hens, Fowls, Poultry, etc.
Pulp, groundwood, bleached and unbleached,

stain differentiation of, C., 120. sampling of, from the reel, apparatus for, C.,

120. See also Paper pulp and Wood pulp.

Pulp fibres, strength of, zero-span test for, C., 72. Pulp mills, control in, by cupriethylenediamine viscosity method, C., 119.

Pulse, wave velocity of, effect of high altitudes on, A., III, 17.

Pulsus alternans, electrical, prognosis of, A., III, 456.

Pumps, air, laboratory, C., 51. low-capacity, C., 145.

diffusion, for analysis of gases in metals, C., 95.

mercury, C., 51. glass, circulation, C., 51. laboratory, small-output, C., 145. perfusion, C., 51.

Punarnavine, and its chloroplatinate and picrate, A., II, 207.

Puncture, lumbar, headaches after, A., III, 647. sternal, death after, A., III, 714.

Pupillography, A., III, 461. Puppies, nutrition of, inadequacy of synthetic B vitamins for, A., III, 48.

Purines, determination of, in protein material, C., 133.

in vegetable foods, C., 82. metabolism of. See under Metabolism. synthesis of, biological, A., III, 202. Purine nucleosides, A., II, 381.

synthesis of, A., II, 59, 350.

Purity, measurement of, cryometers for, C., 47.

of organic substances, C., 116.
Purpura, during pregnancy, A., III, 166.
thrombocytopenic, A., III, 240.

after sulphapyrimidine and sulphathiazole treatment, A., III, 208. in infectious mononucleosis, A., III, 634.

menometrorrhagia and ovarian cysts accompanying, A., III, 810. See also Onyalai.

Purpurin-3, and its derivatives, A., II, 311. Purpurin-3, 7:8-dihydroxy-, methyl ester, A.,

Pus, cells of, life and death in, A., III, 167. Ziehl-Gram staining method for, A., III, 5.

See also Pyuria, etc.

Pyelitis. See Pyelonephritis.

Pyelonephritis, membranous, after amide treatment, A., III, 208. after sulphon-

pregnancy, with hypertension and renal damage, A., III, 475.
pregnancy toxemias in relation to, A., III,

258.Pyelo-ureteral changes, postpartum, hormone administration, A., III, 469.

Pyknometer, for volatile liquids, C., 94. gas, tapless, C., 144.

Pylorus, mucosa of, aminopolypeptidase secretion from, after secretin injection in cats, A., III, 192.

Pyoderma, perianal, treatment of, with low-fat diet and thyroxine, A., III, 184. Pyramidal tract, fibre and numerical analysis of,

in ungulates, A., III, 22.

Pyrazine, water azeotrope of, A., I, 122, 150. Pyrazinecarboxylbenzylamide, A., II, 309.

Pyrazine-2:3-di(carboxyl-n-amylamide), A., II, 309.

Pyrazine-2:3-di(carboxylbenzylamide), A., II, 309. Pyrazoles, synthesis of, A., II, 236.

Pyrazole compounds, A., II, 58, 144. Pyrazolones, colour reaction of, C., 23.

Pyrene, compound of, with s-trinitrobenzene, A.. I, 268.

2-(3'-Pyrenyl)cinchonic acid, A., II, 379. 2-(3'-Pyrenyl)quinoline, and its picrate, A., II,

Pyrethrin, determination of, C., 189. effect of, on mammals, A., III, 430.

spectra of, absorption, and structure, A., I,

Pyrethrolone, and its derivatives, structure of, A., II, 136.

heterogeneous nature of, A., II, 339. structure of, A., II, 225.

Pyrethrum, action of, on cockroach, A., III, 362. analysis of, C., 36.

anti-pest measures with, C., 189. flowers, constituents of, A., II, 339.
Pyridine, compounds of, with copper sulphate,

A., II, 233.

derivatives of, preparation of, by hydrogenation, A., II, 377.

determination of, in ammonia, C., 23. halogenation of, A., II, 143; C., 71.

hydrochloride, cleavage by, of phenol ethers, A., II, 217.

spectrum of, vibrational, and thermodynamic properties, A., I, 213.

sulphonation of, A., II, 143. ultrasonic wave velocity in mixtures of, with

water, A., I, 33.

Pyridine, 2:6-diamino-, azo-derivatives, preparation and bacteriostatic properties of, A., II, 111; III, 295. 3-bromo-, hydrochloride, methiodide, and

metho-p-toluenesulphonate, A., II, 143.

3:5-dibromo-, methiodide and metho-p-toluenesulphonate, A., II, 143. 3- and 4-hydroxy-, benzoyl derivatives, A., II,

Pyridines, hydroxy-, and their esters, catalytic hydrogenation of, A., II, 378.

Pyridine bases, detection and determination of, in denatured spirits, C., 20.

Pyridine-2-aldehyde, 2:4-d:nitrophenyl hydrazone, A., II, 57.

Pyridinebetaine, dielectric constant of, in

dioxan-water mixtures, A., I, 220.

Pyridine-2- and -4-carboxylallylamides, A., II,

4'-Pyridine-2-carboxylamidodiphenylsulphone, 4-amino-, 4-acetyl derivative, A., II, 131.

Pyridine-2- and -4-carboxyl-n-amylamides, A., II. 309. Pyridine-2- and -4-carboxylbenzylamides, A., II,

309. Pyridine-2- and -4-carboxyldibutylaminopropylamides, A., II, 309.

Pyridine-2:5-dicarboxylic acid, preparation of, A., II, 378.

Pyridinehæmochromogen, A., II, 382.

bromo-, Pyridoquinolines, amino-, hydroxy-, and their derivatives, A., II, 349. Pyridoxal, structure and synthesis of, A., II, 347.

vitamin activities of, A., III, 753.

Pyridoxamine, structure and synthesis of, A., II, 347.

vitamin activities of, A., III, 753. Pyridoxine, deficiency of, anæmia due to, in

swine, A., III, 603. anæmia, epileptiform convulsions, and fatty liver in swine with, A., III, 270.

convulsive seizures associated with, A., III, 354.

effect of, on intestinal absorption of galactose in rat, A., III, 199.

determination of, C., 34, 134. in tomato plants, A., III, 232. with Neurospora, C., 34.

effect of, on Salmonella choleræ suis infections in pigs, A., III, 358.

on tumour growth, A., III, 542.

hydrochloride, treatment with, of pregnancy nausea and vomiting, A., III, 593.

Pyridoxine, microbiological utilisation of, and of ψ -pyridoxine, A., III, 615.

requirement of, temperature in relation to,

A., III, 200.
synthesis of, by "pyridoxineless" X-ray mutant of Neurospora sitophila, A., III, 200.

See also Vitamin- B_6 .

ψ-Pyridoxine, determination of, C., 134. effect of, on rat and yeast growth, A., III, 423.

β-3-Pyridylacrylic acid, ethyl ester, hydro-chloride, A., II, 377.

 β -4-Pyridylaerylie acid, copper salt, A., II, 170. 9-ζ-4'-Pyridylamino-n-hexylamino-2-methoxyacridine, 6-chloro-9-\(\zeta\)-2'-amino-, A., II, 83.

9-3'-Pyridylamino-2-methoxyacridine, 6-chloro-, A., II, 83, N'-2-Pyridyl-N'-n-amylsulphanilamide, A., II,

274.

a-2-Pyridylbutyrylcarbamide, A., II, 145. N'-2-Pyridyl-N'-cetylsulphanilamide, and its N4-acetyl derivative, A., II, 274.

N-2-Pyridyl-N'N'-dimethylsulphamide, A., II,

5-2'-Pyridyl-5-ethylbarbituric acid, A., II, 145. β -4-Pyridylhydracrylic acid, and its derivatives, A., II, 170.

2-Pyridylindole, 3-amino-, and its acetyl derivative, A., II, 277.

2:2'-Pyridylindole, 1:3-dihydroxy-, and its hydrochloride, A., II, 277.

2:2-Pyridylindolone, and its oxime and picrate, A., II, 277.

Pyridylisatogens, A., II, 277.

2:2'-Pyridylisatogen, and its derivatives, A., II,

2-Pyridylisoisatogen, A., II, 278.

N'-2-Pyridyl-N'-octadecylsulphanilamide,

1-2'-Pyridylcyclopentanol, A., II, 306. 4'-2''-Pyridylsulphamylazobenzene, 2:4-dihydroxy-, A., II, 368.

Pyrimidine, derivatives, effect of, on murine poliomyelitis, A., III, 607.

nucleosides and nucleotides as growth factors for Neurospora, A., III, 614.

Pyrimidine, 4:6-diamino-, synthesis of, A., II, 59.

2:4-diamino-5-cyano-, and its derivatives, A., II, 146.

4:6-dichloro-, A., II, 59. Pyrimidines, A., II, 171.

derivatives, coupling of, with diazonium salts, A., II, 350.

metabolism of. See under Metabolism. synthesis of, biological, A., III, 202.

from esters and malondiamidine, A., II, 381. Pyrimidines, 5-amino-, preparation of, A., II, 350.

Pyrimidine rings, formation of, A., II, 203.

Pyrimidine-2-carboxylic acid, 4:6-diamino-, A., II, 381.

4-Pyrimidylacetic acid, derivatives of, A., II, 145.

9-y-4'-Pyrimidylaminopropylamino-2-methoxyacridine, 6-chloro-9-y-2'-amino-, A., II, 83.

3-5'-Pyrimidylmethyl-4-methyl-5-β-hydroxy-ethylthiazolium bromide, 3-2':4'-diamino-, hydrobromide and hydrochloride, A., II, 147. p-4'-Pyrimidylthiolphenylarsonic acid,

p-2'-amino-, A., II, 283.

Pyrites, crystal structure of, from X-ray data, A., I, 238.

determination in, of carbon and sulphur, C., 8. of sulphur, C., 11. of sulphur and water, C., 64.

Pyrithiamine, antibacterial action of, A., III, 295.

inhibition by, of growth of micro-organisms, A., III, 370.

Pyrocatechol, detection of, spot tests for, C., determination of, in stibophen, C., 37.

mono-, and di-p-nitrobenzoates, A., II, 99. Pyrocatechols, diphenylmethylene ethers of,

preparation and properties of, A., II, 346. Pyrodelphonine, A., II, 355. Pyrodextrins, structure of, A., II, 153.

Pyrogallol, mono- and di-p-nitrobenzoates, A., II, 100.

Pyrogens, A., III, 773.

role of, in leucocytic response to allantoin, A., III, 634.

Pyrolusite, A., I, 259.

α- and β-Pyronenes, preparation of, from allocimene, A., II, 245; C., 166.

Pyrophosphatase, differentiation of, from phosphoesterase, A., III, 691.

Pyrophosphates. See under Phosphorus. Pyroxenes, distinction of, from amphiboles, A., I,

112. Pyrrhotite, crystallisation of, A., I, 177. 2'-Pyrrolacylpyridinium bromide, A., II, 237.

Pyrrole, derivatives of, preparation of, by hydrogenation, A., II, 377. thio-compounds of, A., II, 239.

Pyrroles, condensation of, with bromine, A., II, 350.

Pyrrole-black, sulphurised, A., II, 239.

Pyrrole-blue, A and B, spectra of, absorption A., I, 265.

Pyrrole series, A., II, 276, 350.

Pyrrolidones, 3-substituted, synthesis of, A., II, 272.

2-Pyrrolidone-5-carboxylic acid, benzyl and diethylaminoethyl esters, A., II, 306.

Pyruvic acid, action on, of Lemoigne's bacilli, A., III, 845.

of yeast enzymes, A., III, 433.

and its methyl ester, diphenylenehydrazones

of, A., II, 83. blood. See under Blood.

decomposition of, by baker's yeast, A., III, 769.

determination of, in presence of fructose or glucose, C., 21.

dissimilation of, anaerobic, A., III, 146. ethyl ester, ethylene ketal of, A., II, 34.

fermentation of, phosphate exchange in, A., III, 845.

metabolism of. See under Metabolism. oxidation of, by pneumococci, inhibition of, A., III, 75.

salts, carboxylation of, A., III, 765. o-Pyruvylacetophenone, A., II, 139.

nutrition Pythiomorpha gonapodyides, manganese in, A., III, 841.

Pythium indigoferæ, growth of, effect of growth

substances on, A., III, 219.
Pyuria, treatment of, with sulphathiazole in newborn, A., III, 206.

Quadruplets, A., III, 712.

mental and physical characteristics of, A., III, 319.

Quantum mechanics of compounds, A., I, 268. Quantum number, relation of, to electro-negativity, A., I, 143.

Quartz, Black Peak, N.W. Otago, piedmontitebearing, A., I, 48.

crystal, New Zealand, A., I, 257.

piezo-electric oscillations of, A., I, 241. elastic constants of, calculated from Raman effect data, A., I, 213.

etching of sections of, with hydrofluoric acid,

A., I, 208. powdered, suspensions, settling of, A., I, 175. X-ray diffraction by, in supersonic vibration,

A., I, 193.

suspensions, viscosity of, effect of strong electrolytes on, A., I. 13.

Quartz-magnesite, Cobb-Takaka district, A., I, Quaterphenyl, diradicaloid derivatives of, A., II,

189. Quercus alba, acorns, respiration of, in germin-

ation, A., III, 308.

Quinacrine: See Atebrin. Quinaldic acid, salts, insoluble, precipitation of,

A., I, 123. Quinaldine, 4-chloro-, with reaction of.

hydrazine, A., II, 201.

Quinaldine, 8-hydroxy-, use of, as analytical reagent, A., II, 347; C., 195.

dialkylaminoalkyl Quinaldines, substituted, derivatives of, A., II, 379. synthesis of, A., II, 170.

Quinaldinic acid, reduction of, at dropping mercury cathodes, A., I, 284. Quinidine, action of, A., II, 383.

propylene glycol for rendering, injectable, A., III, 134.

treatment with, in cardiac arrhythmias, A., III, 210.

of abnormal heart rhythm, A., III, 428. Quinidinetetra-azidocopper, A., I, 290.

Quinine, action of, A., II, 383.

chemotherapeutic action of, A., III, 679. derivatives, antiplasmodial action of, A., II, 355.

preparation and properties of, A., III, 680.

destruction of, metabolic, role of liver in, A., III, 136.

effect of, on absorption of sugars from guineapig intestine, A., III, 192.

climination of, effect of urinary pH on, in man, A., III, 414.

metabolism of. See under Metabolism.

plasmodocidal effect of, on Plasmodium lophuræ, A., III, 56.

reaction to, A., III, 359. synthesis of, A., II, 314.

treatment with, of cerebral malaria, A., III, 279.

of malaria in birds, A., III, 493.

*soQuinine, derivatives, antiplasmodial action of, A., II, 355.

Quinine alkaloids, action of, A., III, 831. Quinine oxidase. See under Oxidase.

Quininetetra-azidocopper, A., I, 290. Quininol sulphate, A., II, 355.

Quinol, detection of, spot tests for, C., 168. ethyl allyl ether, A., II, 346.

growth of, on celestine, heavy spar, and mica, A., I, 194.

polymerisation of, A., I, 248.

Quinoline, synthesis of, from benzene and

glycerol, A., II, 201. Quinoline, 8-bromo-6-amino-, and its hydrochloride, A., II, 349.

chloroiodohydroxy-, absorption and toxicity of, A., III, 681.

hydroxy-, ethers, quaternary salts of, A., II, 111.

2- and 4-hydroxy-, benzovl derivatives, A., II, 378.

8-hydroxy-, azo-derivatives, preparation and bacteriostatic properties of, A., II, 144; III, 295.

flotation with, A., I, 83. 2:8-dihydroxy-, 8-mono- and 2:8-di-benzovl derivatives, A., II, 378.

6:7-dihydroxy-, and its derivatives, A., II,

2:ω-3':4':5'-tetrahydroxy-, 2-3':4':5'-triacetyl-2-benzoyl derivative, A., II, 378.

diodohydroxy-, absorption and toxicity of, A., III, 681.

isoQuinoline, derivatives, arylation of, A., II,

isoQuinoline, 1- and 2-hydroxy-, benzoates, A., II, 378.

Quinolines, as open models of atebrin, A., II, 308.

substituted, A., II, 379. dialkylaminoalkyl derivatives, A., II. 379.

syntheses of, from o'-aminobenzylidene-ptoluidines, A., II, 307.

Quinolines, hydroxy-, and their esters, catalytic hydrogenation of, A., II, 378. condensation of, with xanthhydrol, A., II,

239. Quinoline-2-aldehyde, phenylhydrazone of, and its derivatives, A., II, 308.

Quinoline-3-carboxylbenzylamide, A., II, 309. Quinolinedlazidocopper, A., I, 290.

4:5-2':3'-Quinolinopyridazinone, A., II, 307. 2:3'-180Quinolyl-3-ethylindole, and its salts, A., II, 63.

2-Quinolylmethyldi-pp-tetramethyldiaminodiphenylcarbinol, and its perchlorate, A., II,

Quinone. See Benzoquinone.

Quinones, antibacterial effects of, A., III, 209. oximes of, hydrolysis of, A., II, 373. reaction of, with metallic enolates, A., II, 54,

103, 376.

o-Quinones, action of, with primary amines, A., II, 85.

o-Quinoneimines, reaction of, with alkylidenebisamines and hydrobenzamide, A., II, 146.

with primary amines, A., II, 85.

Quinonemethides, polymeric, heating of, oxidoreduction during, A., II, 192.

9-Quino[3,2,1-k1]-phenthiazone, A., II, 314. Quinotoxine, and its derivatives, partial synthesis of, A., II, 86.

Quinoxalines, formation of, and ortho-effect, A., II. 310.

R.

R.63, dimeconate and tartrate of, A., II, 56. RY Scuti, spectrum of, A., I, 161.

Rabbits, hermaphrodite, pregnant, reproductive system of, A., III, 29.

New Zealand, growing and mature, endocrines in relation to body weight in, A., III, 184.

Rabbit holder, multiple, C., 141.

Rabies, human, salivary infection in, A., III,

paralytic, A., III, 702. virulence of brain suspensions in, effect of autolysis and proteolysis on, A., III, 621. complement fixation

immunised with, A., III, 79. from jackal, injected into domestic fowls, A., III, 226.

in chick embryo, A., III, 225. proteolysis of, A., III, 702.

ψ-Rabies, virus, ultracentrifugation and ultrafiltration of, A., III, 702.

Races. intertemporal-interangular index distinctions among, A., III, 520. Racemates, active, formation of,

hetween organic compounds of selenium and sulphur, A., II, 321.

partial, active, A., II, 320. Raddeanine, and its derivatives, A., II, 206. Radiation. See Rays.

Radiation theory, finite self-energies in, A., I, 190.

quantum, photons in, A., I, 115.

Radicals, free, reactions of, with atoms, in solution, A., II, 165.

Wurster dye type, polymerisation of, A., II, 11.

migration of, during Grignard reactions, A., ĬI. 191.

Radioactive β -decay, A., I, 190.

α-disintegration, A., I, 209.

β-disintegration, analysis of data for, A., I,

elements, artificial, application of, to study of complexes, A., I, 68.

 β -nuclei, Sargent curves for, A., I, 233. substances, A., I, 208.

disintegration of, A., I, 76, 263. Radioactivity, helium distribution and, in

rocks, A., I, 257. of rocks, A., I, 69.

β-Radioactivity, theories of, A., I, 233. Radio-chemical analysis. See under Analysis. Radiochemistry, A., I, 133.

Radiographs, X-ray, improvement of, C., 198. Radiology, eyes and, A., III, 248.

in abdominal emergencies, A., III, 137.

Radiotherapy, sulphanilamide powder application in, A., III, 207. Radiothorium, separation of, from radium-D, A.,

I, 133. Radiovanadium. See Vanadium, isotopes. Radio-waves. See under Waves.

Radishes, β -glucoside induced in, A., III, 87. Radium, treatment with, of conduction deafness, A., III, 105.

Radium determination :-

determination of, counting method for, C., 103. Radium-D, y-rays from, A., I, 210.

separation of, from radiothorium, A., I, 133. spectrum of, LX-ray, A., I, 185. Radium emanation. See Radon.

Radon, as indicator for reactions and selfdiffusion of, A., I, 179. content of, in waters of Tartar S.S.R., A., I,

determination of, counting method for, C., 103.

diffusion of, experiment demonstrating, A., I, 149.

evolution of, y-rays emitted in, spectra of, A., I, 188.

inhalation of, tumour production by, A., III, 819.

spectrum of, magnetic dipole transitions in, A., I, 261.

treatment with, in otolaryngology, A., III, 805. Raffinose, octa (? hepta)-p-benzeneazobenzoate, A., II, 6.

Rage, subcortical centre of, in cats, A., III, 21.

Ragweed, pollen, antibody to, A., III, 305. extracts, antibody in serum of patients treated with, A., III, 852.

electrophoresis of, A., III, 852. fractionation of, A., III, 852. Railroad worm. See Phryxothrix. Raman effect. See Spectra, Raman.

Ramie, end group content of, A., II, 40.

Rana clamitans, metamorphosis of, inhibition of, by thiouracil, A., III, 464. tadpoles, limbs of, amputation level and

regeneration in, A., III, 159.

Rana pipiens, host metamorphosis in, behaviour of transplants during, A., III, 518.

larval olfactory organ of, development of, A., III, 159.

neurenteric canal in, A., III, 4.

normal and pituitary-stimulated, seasonal study of, A., III, 737.

tadpoles, goitre production in, by cabbage feeding and methyl cyanide, A., III, 185. Rana temporaria, body temperature of, A., III,

260. genitals of, after male hormone injections

during metamorphoses, A., III, 594 larval development in, pituitary histology during, A., III, 711.

tadpoles, extremities of, loss of regeneration ability in, A., III, 711. Rancidity, ketonic, chemistry of, A., III, 290.

Rape seed, sulphur constituents of, A., III, 708. Raspherries, tetraploid, production of, A., III, 854.

Rats, abnormal behaviour of, nutritional basis of, A., III, 354.

age and organ metabolism in, A., III, 50. ageing, basal metabolism, and retarded

growth in, A., III, 129. chronic diseases, growth, and life span in, A., III, 128.

albino, activity rhythms of, effect of light and temperature on, A., III, 476.

breeding and rearing of, subjected to auditory stimulation, A., III, 809.

mineral composition of, in relation to chloride deficiency, A., III, 131. body composition and metabolism of, effect of

temperature and dietary vitamin-B on, A., III, 422.

body and liver of, cholesterol content and neutral fat of, effect of thyroxine on, A., III, 727.

See Proechimys. bush.

cane. See Zygodontomys.

cotton. See Sigmodon hispidus hispidus.

feeding of, by injection, C., 93. female, male behaviour of, due to hormone injection, A., III, 345.

reproductive capacity of, treated prepuberally with cestrogenic hormone, A., III,

Rats, growth, lactation, and reproduction in, on purified diets, A., III, 545. inbred, differences in, A., III, 319. linkage studies of, A., III, 572. malformations in, induced by riboflavin lack in maternal diet, A., III, 423. normal and trauma-resistant, biochemical findings in, after trauma, A., III, 328. reproductive system of. See under Reproductive system. resistance of, to heat and cold, effect of hepatectomy on, A., III, 115. Rat-bite fever, A., III, 693. attus norvegicus, microphthalmos embryology of, A., III, 248. Rays, absorption of, surface, relation of colour change to, in frogs, A., III, 349. atomic, apparatus for luminous excitation with, A., I, 73. use of, for luminous excitation of elements, C., 98. biological action of, theory of, A., III, 430, 611. cosmic, A., I, 163, 210. absorption of hard component of, A., I, 115. bursts of, in ionisation chamber, A., I, 2. burst production of, effect of damping on, A., I, 26. inside Wilson chamber, A., I, 26. under thick shields, A., I, 26. components of, separation of, A., I, 163, 210. heavy particles and nuclear disintegration in, A., I, 163. mesotron component of, A., I, 2, 190, multiple production of penetrating particles by, A., I, 26. nuclear disintegration caused by, A., I, 190. origin of, A., I, 52. penetrating, multiple production of, in lead, A., I, 263. non-ionising, A., I, 52. primary, production by, of secondaries in paraffin, A., I, 26. secondary particles from, in lower atmosphere, A., I, 26. separation of electronic component of, C., 148. showers, angular distribution of particles in, A., II, 115. cascade theory of, A., I, 263. penetrating, A., I, 190. with non-synchronised particles, A., I, 115. spectrum of, and Auger showers, A., I, 2. in air, A., I, 263. statistical mechanics of, A., I, 27. damping of, quantum theory of. A., I, 164. effect of, on plant respiration, A., III, 852. infra-red, scattering of. in relation to mol. wt., A., I, 165. transmission of, through bentonite, A., I, 223.intensities of, measurement of, with counter tubes, C., 103. measurement of, in medicine, A., III, 215. Rayleigh, depolarisation of, by water and electrolytic solutions, A., I, 213. shower-producing, in cloud-chamber at 10,000 ft., A., I, 139. thermal, instrument for measuring, limiting capacity of, C., 101. treatment with, of leukæmia, A., III, 8. ultra-, impact curves for, transmitted from air to metals, A., I, 76. use of, in petroleum analysis, C., 115. α-Rays, energy of, A., I, 51. B-Rays, internal conversion of, and Einstein's law, A., I, 139. X-Rays, analysis with, C., 44. biological effects of, in relation to intensity, A., III, 686. camera for, C., 44. Debye-type, for coarse-grained material, chest survey with, A., III, 763.

X-Rays, contrast substances for, iodinecontaining, A., II, 15, 23, 24, 295. crystals, and molecules, A., I, 269. crystal structure and, A., I, 238. curve for, C1, 44. cytological effect of, and of neutrons, A., III, 215. depth doses for, A., III, 837. diffraction of, by distorted-crystal aggregates, A., I, 143. by liquid elements, A., I, 167. diffraction apparatus for, C., 146. dosage of, in relation to mitosis and polyploidy, A., III, 85. effect of, on erythrocytes, A., III, 390. on nucleic acid metabolism in Jensen sarcoma, A., III, 819. on plant growth, A., III, 363. on yeast, A., III, 497. film evaluation for, C., 146. hard, effect of, on intestines of dogs fed iron compounds, A., III, 497. injury from, experimental, A., III, 686. integral energy of lines from, in structure analysis, C., 198. intensity distribution of, from anticathodes, A., I, 138. mass absorption coefficients for, A., I, 93. monochromator for, C., 199. aluminium as, C., 96. photographs of. See under Photographs. photography with, device for, C., 44. proof of medical facts by, A., III, 215. scattering of, by colloidal particles, A., I, 247. in polycrystalline substances, A., I, 215. screens for, metal foils as, C., 96. sensitivity to, of asphyxiated mice, A., III, spectrum of, continuous, theory of, A., I, 73. testing of plastics with, C., 96. treatment with, A., III, 284. for superfluous hair, cheek epithelioma after, A., III, 822. of ears, A., III, 805. of eye diseases, A., III, 335. sickness from, A., III, 763. tubes, Hägg, with exchangeable cathode, C., 96. using electron gun, C., 96. water-cooled, switch for use with, C., 44. use of, in foundries, C., 112. Rayleigh lines, structure of, from resonance absorption, A., I, 118. Raynaud's disease, clinical manifestations and treatment of, A., III, 328. Reactions, atomic, apparatus for, A., I, 186. chain, autogenesis of, A., I, 64. chain rupture in, at solid surfaces, A., I, 178. rate-determining reaction in, A., I, 157. complex, homogeneous, kinetics of, A., I, 203. consecutive, competitive, A., I, 107. continuous, velocity and yield in, A., I, 287. exchange, A., I, 255. explosive, A., I, 251, 285. fluorescence, C., 70. gas-stream procedure in, reactants, C., 143. with volatile hydrothermal, A., I, 43 in shock waves, A., I, 179. induced by nuclear processes, A., I, 106. ionic, in aqueous solutions, A., I, 252. kinetics and mechanism of, A., I, 106. mechanism of, A., II, 76. isotopic method applied to investigation of, A., II, 119, 122. uni- and bi-molecular, kinetics of, A., I, 87. of patient and doctor, instrument for recording, A., III, 403. poly-. See Poly-reactions. replacement, neighbouring groups in, A., II, suitable for calorimetric measurements, A., I, 68. Reagents, for cations, C., 5, 162. for detection of organic compounds, C., 118. organic, for metallurgical micro-analysis, C. in inorganic analysis, C., 195.

Reagents, protection of, from deterioration, C., 44. specifications for, C., 196. Realgar. See Arsenic disulphide.
"Rebound phenomenon," relation of, to estrogen and progestogen metabolism, A., III, 737. Recklinghausen's disease, with sarcomatous change and metastasis to regional lymph nodes, A., III, 821. Recrystallisation, kinetics of, A., I, 33. Rectum, cancer of, diagnosis of, A., III, 263. chemotherapy of, A., III, 207. hæmangioma of, A., III, 600. hæmorrhage from, A., III, 193. Rectus. See under Muscle.
Redox potential. See under Potential. Reducing agents, inorganic, autoxidation of, A., Reduction, by dissolving metals, A., II, 367. selective, of aromatic dinitro-compounds, by alkaline sulphides and by acid stannous chloride, A., II, 11. with nickel-aluminium alloys and aqueous alkali, A., II, 154, 258. Reductone, vitamin-C and, A., II, 360. Reflecting power of materials, comparison of, (P.), C., 46. Reflexes, conditioned, cardiac slowing as, in rabbits, A., III, 647. negative, versus absence of response from external inhibition, A., III, 331. homolateral, exaggeration of, after brain-stem lesion, A., III, 20. inspiratory, after phrenicotomy, A., III, 17. lachrimation, A., III, 583. light, pupillary, influence of alcohol on, in man, A., Ill, 530. limb, as factor in hyperpnæa of muscular exercise, A., III, 244. hind, ipsilateral, transmission of, neurone patterns controlling, in cats, A., III, 400. linguo-maxillary, A., III, 648. anatomical basis of, A., III, 101. pupillary, to darkness, A., III, 334. respiratory, of vagal origin, central mechanism of, A., III, 20. proprioceptive, upper respiratory tract and, A., III, 175. skin, galvanic, A., III, 259. spinal cord, effect on, of temperature, A., III, 401. vasomotor, produced by sensory nerve stimulation in mammals, A., III, 20. Reformatsky reaction, phenyl esters in, A., II, 162. using vinylogues of halogenoacetic esters, A., II, 287. with benzylideneaniline, A., II, 99. Refraction, decrease of, and reduction of magnetic susceptibility, A., I, 119. dispersion of, in infra-red, ultra-violet, and visible, A., I, 193. double, demonstration of positive or negative character of, A., I, 241. electric, in disperse systems, A., I, 166. Refractive index, immersion mounts for, gelatincoated slides for, C., 100. in electron optics, A., I, 138. in ultra-violet, A., I, 193. measurement of, apparatus for, C., 150. in micaceous minerals, C., 150... of ionised medium, A., I, 187. of liquid fatty acids, nomograph for, A., I, 80. Refractometers, Abbé, C., 150. for observations on fluids flowing under pressure, C., 150. Refractometry, commercial, sources of error in, C., 150. Refractories, fireclay, thermal conductivity of, C., 55. plastic, workability factor for, C., 55. Relaxin, bioassav, preparation, and properties of, A., III, 467. concentration of, in serum of pregnant and post-partum rabbits, A., III, 468. Renin, action of, on blood-pressure of rate, A., III, 576.

Renin, activator for, change in designation of, to renin-substrate, A., III, 457.

preparation of, C., 175. purification of, A., III, 99. standardisation of, A., III, 99.

substrate, from ox serum, A., III, 174. in dog's lymph and plasma, A., III, 328.

Renin-angiotonin pressor system, A., III, 99. Renin substrate, assay of, C., 175.

Rennin, absence of, from human gastric juice, A., III, 255.

Repellents, for tsetse fly, A., III, 137.

Reproduction, capacity for, in male rats treated prepuberally with androgen, A., III, 343. dietary factor in, A., III, 48.

effect on, of artificial light, in turkeys, A., III,

of sulphaguanidine in purified diet, A., III, 343.

of tryptophan deficiency, A., III, 41. of vitamin-E in dogs on milk diets, A., III,

vitamin-E in relation to, A., III, 255.

Reproductive cycle, chimpanzee. See under Chimpanzee.

Reproductive system, effect on, of low atmospheric pressure, in rats, A., III, 329. of testosterone propionate in English sparrow, A., III, 254.

of pregnant hermaphrodite rabbit, A., III, 29. rat's, male, effect of low atmospheric pressure

on, A., III, 29. inhibition of cestrogenic effects on, by testosterone injections, A., III, 30.

tumours of, chemically induced, hormonal influence on, A., III, 661.

Reproductive tract, reactivity in, in relation to age in rats, A., III, 654.

sensitivity of, to gonadotropic substances, in hypophysectomised male rats, A., III,

Resazurin, solutions of, C., 179. Resazurin test, C., 179, 180.

Resins, acid value of, determination of, sub-

stitute for benzene in, C., 74. dark-coloured, analysis of, C., 50.

dermatitis due to, in finished fabrics, A., III, 836.

penetration of, into paper, and their absorption, C., 122.

Resins. natural, guayule, constituents of, A., II, 269.

decomposition of, by micro-organisms, A., III, 845.

Resins, synthetic, acrylic, elastic, use of, for facial deformities, A., III, 415.

alkyd, determination in, of phthalic anhydride, C., 123.

formaldehyde-phenol, A., II, 192.

phenol, hardening of, quinonemethide as product in, A., II, 192.

Resin acids, A., II, 344.
determination of, in tall oil, C., 172.

Resinols, triterpene, A., II, 231.

Resistance, determination of, of material in discs, C., 49.

Resonance, effect of, on force constants and lengths of bonds, A., I, 53.

steric inhibition of, A., I, 238 Resorcinol, detection of, spot tests for, C., 168. dielectric constant of, A., I, 79.

mono- and di-p-nitrobenzoates, A., II, 99. polymerisation of, A., I, 248.

Resorcinols, vicinal-substituted, A., II, 134. after stimulation of afferent Respiration, phrenic fibres, A., III, 175.

alteration in, by stimulation of vagal afferents, pneumogram tracing after, A., III, 175. artificial, A., III, 176, 799. methods of, A., III, 578.

See also Resuscitation. depth of, periodic changes in, due to lung changes, A., III, 17.

effect of, on blood-pressure in man, A., III,

effect on, of diethylstilbæstrol in albino rats, A., III. 31.

of nitroparaffins in rabbits, A., III, 61.

Respiration, effect on, of oxygen inhalation in dogs before and after chemoreceptor denervation, A., III, 398.

of pleural effusion in man, A., III, 642.

fœtal, inauguration of, relation of maternal ethyl anæsthesia to, A., III, 683.

kinetics of, A., III, 497. of cells, A., III, 146.

effex stimulation in, phrenicotomy, A., III, 17. reflex after unilateral

regulation of, humoral and reflex factors in, A., III, 328.

shallow, abnormal activity in vagal afferent fibres as factor in, A., III, 579.

stimulants for, effect of, on animals under pentothal sodium anæsthesia, A., III, 495. thermodynamic aspect of, A., III, 604.

tissue, effect on, of thyroid treatment, in rats, A., III, 728.

tissue slice preparation for studies in, use of low temperature during, A., III, 754.

Respiratory centre, effect on, of chemical and electrical stimulation, A., III, 641. periodicity and survival of, A., III, 402

stimulation of, by acetylcholine, A., III, 401. Respiratory metabolism, action on, of caffeine, pure, and in coffee and tea, A., III, 604.

of sulphonated succinic acid on, in frog tissues, A., III, 604.

pituitary in relation to, A., III, 21.

Respiratory tract, fluid in, constituents of, A., III, 660.

output of, effect of sympathominetic amines on, A, III, 245.

infections of, effect on, of ultra-violet light, A., III, 284.

treatment of, with sulphapyrimidine, A., JII, 205, 828. secretion from, effect of ether anæsthesia on,

A., III, 495. upper, and proprioceptive respiratory reflexes,

A., III, 175. bacterial flora of, effect of anæsthetics on,

A., III, 361.

cancer of, metastasis in, A., III, 417. infections of, red cell sedimentation rate in, A., III, 240.

Resuscitation, oxygen therapy and, A., III, 458. Resveratrole, synthesis of, A., II, 191.

Reticuloendothelial system, relation antithrombin and immunity, A., III, 523. Retinene, preparation of, in vitro, A., III, 405.

Retinitis, exudative and hæmorrhagic, with increased intraocular tension, treated with pilocarpine and thyroid, A., III, 461.

foveo-macular, in U.S. navy, A., III, 804. photo-, experimental, A., III, 651.

Retinoblastoma, genetics of, A., III, 531. Retinoscopy, cylinder, in relation to phenomena of crossed cylinders and clinical refraction, A., III, 23.

principles of, A., III, 461. Retorts, stand for, C., 54.

Retronecanol, isomerides of, and their derivatives, A., II, 241.

Retronecine, structure of, A., II, 87, 241. Rhabdomyosarcoma, at Institute of Cancer

Research, Columbia University, New York, A., III, 544.

l-Rhamnose-p-tolylamine, A., II, 72. Rhenium, spectrum of, K-absorption, A., I, 233.

Rhenium salts, complex, A., I, 90. Rhenium detection :-

detection in, of tungsten, C., 111. Rheochor, application of, A., I, 219.

III, 715.

Rheological constants, evaluation of, from compressive and tensile tests, C., 95, 143.

Rheotome for demonstration of refractory period, C., 127.
Rheumatic disease. See under Disease and

Rheumatism.

Rheumatic fever, A., III, 77, 699. acute, hyperinsulinism as ætiological factor in, A., III, 588.

and rheumatic heart disease in Los Angeles children, A., III, 638. blood sedimentation rate in, in children, A., Rheumatic fever, epidemic, A., III, 301.

lesions in, similar to those produced by deoxycorticosterone, A., III, 14. prevention of, by sulphanilamide in children,

A., III, 757. Rheumatism, chronic, chemotherapy in, A., III.

palindromie, A., III, 745.

Rhinitis, allergic, due to Spanish moss, A., III, 852,

vasomotor, A., III, 641.

moulds in relation to, A., III, 559. See also Coryza.

Rhinobatus granulatus, corpus luteum in, A., III, 449. Rhizobium radicicolum, polysaccharide form-

ation by, A., III, 696. Rhizopertha dominica, host selection in, A., III.

261.

Rhizopus suinus, fermentation by, alcoholic, effect on, of pyrimidine and thiazole compounds, A., 111, 433.

growth of, effect of growth factors on, A., III, 615.

factors stimulating, A., III, 368.

Rhodamine-B, spectrum of, absorption, A., I. 96.

Rhodium compounds, polarographic reduction of, A., I, 284.

di- and ter-valent, A., I, 46; II, 377.

Rhodium organic compounds :-

Rhodium carbonyls, and their derivatives, A., I, 183.

Rhodous halides, complexes of, with dialkylarsines, A., I, 46.

with pyridine, A., II, 377.
Rhodizite, structure of, A., I, 240.
Rhodnius prolixus, fate of hæmoglobin in, and other blood-sucking arthropods, A., III, 118. Rhodophora florida, Malpighian tubes of, arsenio

excretion by, A., III, 540. Rhodoporphyrin, hydroxy-, benzoyl derivative, dimethyl ester, A., II, 381, 382.

Rhodospirillium rubrum, growth requirements of, A., III, 561.

Rhus typhina, fruit, constituents of, A., III, 315.

Ribs, abnormalities of, roentgenograms of, A., III, 785.

length of, in American whites and negroes, A., III, 712.

ossification of, familial pattern of, in rabbits, A., III, 236.

2-Ribitylamino-4:5-dimethyldiphenylamine, 2':4':6'-trinitro-, A., II, 380.

N-d-Ribityl-o-4-xylidine, preparation of, and its tetra-acetate, A., II, 362.

d-Ribobenziminazole, A., II, 85. and its derivatives, A., II; 37. properties of, A., II, 349.

Riboffavin, content of, in American diet, A., III, 125.

in grain sorghums, A., III, 603. in pork, A., III, 45. deficiency of, and allied deficiencies, A., III, 673.

effect of, on intestinal absorption of galactose in rat, A., III, 199.

genetic resistance to, in chicks, A., III,

in dog's eyes, A., III, 103. ocular signs of, A., III, 404.

produced by phenazine analogues of ribo-flavin, A., II, 380.

production of, in monkeys, A., III, 487. with phenazine analogues of riboflavin, A., III, 752.

skin temperatures of extremities in cases of,

A., III, 751.

destruction of, by light, A., III, 487. determination of, C., 34. fluorometrically, glass standards for, C., 46. in brewing materials, C., 128.

in dried milk products, C., 34. in foods, C., 34.

in meat, fluorometrically, C., 180.

in pig products, fluorometrically, C., 34. in urine, C., 183.

Riboflavin, effect of, on corneal vascularisation, and eye fatigue in R.C.A.F. personnel, A., III, 247. effect of increasing dose of, on its utilisation efficiency, A., III, 423. fluorescence of, in presence of electrolytes,

C., 183. in bee bread, A., III, 353.

in blood regeneration, A., III, 45.

in food at R.A.F. stations, A., III, 673. in immature lettuce, A., III, 603.

in liver, in thiamin deficiency, A., III, 752.

in milk, A., III, 824. destruction of, by sunlight, A., III, 673. pasteurised and raw, A., III, 125.

produced under standardised conditions, A., III, 423. in nutrition of horse, A., III, 547.

in soil, A., III, 46.

lack of, in maternal diet, malformations in rats induced by, A., III, 423.

microbiology of, A., III, 561, 847.

relation of, to thiamin in man and rats, A., III, 199.

requirements of, clinical study of, A., III, 353.

for lactic bacteria, A., III, 844. for pre-school children, A., III, 672 temperature in relation to, A., III, 200.

stability of, in milk, effect of incubation on, A., III, 423.

urinary excretion of, A., III, 603. effect of thiamin on, A., III, 672.

See also Vitamin- B_2 . isoRiboflavin, antiriboflavin effect of, A., III, 603.

d-Ribolactone triacetate, A., II, 321.

d-Ribonic acid, and its tetra-acetate, A. II,

d-Ribonitrile tetraacetate, A., II, 321.

d-Ribono-o-4-xylidide, and its derivatives, A., II, 362.

Ribonuclease, determination of, in biological material, A., III, 689; C., 186.

Ribonucleic acids, in tissues, A., III, 476.

liver-, isolation and properties of, A., III, 743. d-Ribose, A., II, 37.

identification of, A., II, 37.
5-triphenylmethyl ether, and its 1:2:3-triacetate, A., II, 37. d- and l-Ribose-3:4-dimethylphenylamines, A.,

II, 72.

Ribosenucleoproteins, distinction of, deoxyribosenucleoproteins, A., III, 516. t-Ribose-p-tolylamine, A., II, 72.

Rice, proteins, biological value of, A., III, 123. raw and parboiled, nicotinic acid content of, effect of cooking and washing on, A., III, 548.

stored underground, vitamin- B_1 content of, A., III, 547.

Rice plants, growth of, effect of vitamin- B_1 on, A., III, 231.

field, and photoperiod, A., III, 705. physiology of, A., III, 230.

seedling, germination, growth, and respiration of, A., III, 513.

winter paddy, photoperiodicity of, A., III,

Ricinus communis, tetraploids in, colchicine-induced, A., III, 85.

Rickets, calcium content of soft tissues in, in rats, A., III, 272.

cure and prevention of, by sunlight in Oklahoma, A., III, 272.

late, A., III, 424.

prevalence of, in children between 2 and 14 years of age, A., III, 48.

prevention of, efficacy of calcium carbonate and phosphate in, in rats, A., III, 128. with vitamin-D, A., III, 488.

production of, equilibrium lack between dietary calcium and phosphorus in, A., III,

renal, treatment of, with calcium and vitamin-D, A., III, 675.

resistant, bone salt metabolism in, A., III,

Rickets, serum-phosphatase in, activity of, in children in Jerusalem, A., III, 718.

effect of vitamin-D on, A., III, 488.

Rickettsia, South African, cultivation of, in chicks, A., III, 850. staining of, A., III, 621.

typhus, inclusion bodies associated with, A., III, 512.

murine, infection with, in mice, A., III, 512. treatment of, with penicillin, A., III,

vaccine, use of, as antigen, A., III, 152. Rickettsia prowazeki, survival of, in various fluids, A., III, 850.

Rickettsial diseases. See under Diseases. Rigidity, modulus of, of liquids, A., I, 81.

Ring systems, condensed, synthesis of, A., II, 138, 139.

Ring-worm, scalp, infectivity of fluorescent hairs in, A., III, 70.

River Piasina, hydrochemistry of, A., I, 69. River Volga, and its tributaries, hydrochemistry of, A., I, 69.

Rocks, adsorption by, of hardness-reducers, A., 1, 296.

alkaline, Lake Kovdor, A., I, 295. analysis of, microchemically, C., 14.

Bettyhill, Sutherland, migmatisation of, A., I,

Deccan trap, Bombay and Salsette Islands, age of, A., I, 208.

detection in, of bitumen, A., I, 71.

determination in, of beryllium, photo-metrically, C., 106.

of strontium, spectroscopically, C., 107. of tungsten, C., 64. geological age of, by α-helium method, A., I,

293.

helium content of, A., I, 46, 232.

igneous, age determination of, by lead method, A., I, 24.

intrusive, Shelve area, South Shropshire, A., I, 135.

magnetisation of, effect of iron deposits on, A., I, 257.

magnetism of, A., I, 70.

Matzesta, radioactivity of, A., I, 69. metamorphic, isotopic water in, A., I, 46. Permian, S. Durham, mineralisation of, A., I,

phosphate-siderite, Transbaikalia, A., I. 295.

radioactive elements of, A., I, 258. radiogenic heat in, A., I, 69. regeneration of, A., I, 70.

sedimentary, potentials in, A., I, 24. thorium-uranium ratio in, A., I, 258. volcanic, Panjal traps, A., I, 184.

solfataric alteration of, A., I, 294. Rock salt, cobaltised, for preventing cobalt deficiency in sheep, A., III, 750.

crystals, electric discharges in, A., I, 271.

specific heat of, A., I, 218.
Rodents, brain of. See under Brain.
dl-Roemerine, and its derivatives, A., II, 383.

d-Roemerine, A., II, 383. l-Roemerine, synthesis of, A., II, 383.

Reentgenograms, chest, during pertussis, A., III, 722.

Roots, formation of, growth substances stimulating, A., III, 782.

stimulants for, in ivy and turf extracts, A., III, 855.

growth of, in excised tips, A., III, 306, 308. hairs, water absorption by, A., III, 513. nodule, determination in, of hydroxylamine, C., 139.

pressure in, diurnal variation in, A., III, 306.

water entry into, device for measuring, C., 188.

Root rot. See Phymatotrichum omnivorum. Rosacea, ocular, in ariboflavinosis, A., III, 584. Rosasite, Kyzyl-Espe deposit, A., I, 71. Rose hips, carotene and lycopene in, A., III,

516, 783. vitamin-P in, *A., III, 676, 825.

Rose trees, shoot development of, in storage, effect of growth-substances on, A., III, 782.

Rosmarinecine, and its methiodide, A., II, 27. Rosmarinine, A., II, 26.

Rossi curve, second maximum of, A., I, 235. Rotation, hindered, in ions in solution, electrostatic contribution to, A., I, 78.

internal, barrier hindering, A., I, 268. magnetic, A., I, 223.

optical, and atomic dimensions, A., II, 29. Rotenone, detection of, C., 189.

toxicity of, to animals, A., III, 281. Rotors, asymmetric, A., I, 235.

Roundworms. See Ascaris lumbricoides.

Royal jelly. See under Bees. Rubber, A., II, 22, 187.

butyl, determination in, of sulphur, C., 172. chemical linking of, with phenol-formaldehyde resins, A., II, 22.

colloidal sols of, structure of, A., I, 36. detection in, of neoprene, C., 123.

determination in, of mercury, C., 26. of sulphur, C., 26.

extraction of, quantitative, apparatus for, C.,

hardness testing of, C., 173. machine for, C., 173. with plastometer, C., 75. kinetic theory of, A., I, 14.

mol. wt. of, A., I, 202. molecules, length of, A., I, 126.

natural and synthetic, analysis of, C., 75. cure of, rate determination of, C., 74. creep and hardness determinations of,

apparatus for, C., 173. relaxation of, C., 123.

vibration characteristics of, C., 173.

plastometer for, C., 173. preparations, brittle point of, determined in cold air, C., 123.

X-ray structure of, A., I, 271 reaction of, with liquids, A., I, 280. resilience of, pendulum test for, C., 173.

solutions, industrial, toxic effects from exposure to, A., III, 762. statistical thermodynamics of, A., I, 61.

stocks, natural and synthetic, tread cracking of, C., 123. stretched, magnetic anisotropy of, A., I,

120. synthesis of, from gases, A., II, 117.

synthetic, analysis of, and of mixtures with natural rubber, C., 123. elasticity of, C., 75.

emulsion polymerisation of, C., 74. GR-S, specification of, C., 75.

tensile tests on, scale for readings in, C., 95. tensiometer stiffness test for, C., 75. testing of, C., 26.

in compression, C., 123.

with uranyl oxalate actinometer, C., 172. vulcanised, analysis of, C., 172.

stress-strain data for, A., I, 103. Rubber membranes. See under Membranes.

Rubber tubing, fixing of, on to glass tubing,

Rubber tyres. See under Tyres.
Rubella, maternal, during pregnancy, infant
death from congenital defects after, A., III, 817.

Rubellin, action of, A., III, 832. Rubidium, position of, in active alkali cations, A., I, 15.

Rubidium azidocuprate, A., I, 182. Rubidium determination :-

determination of, in minerals and solutions, C., 5.

Rubijervine, conversion of, into allorubijervine,

A., II, 206. allo- and epi-alloRubijervines, A., II, 206.

Rubijervone, and its oxime, A., II, 206. Rumen, lamb's, sodium o-iodohippurate absorption from, A., III, 34.

sheep's, absorption from, of volatile acids, A., III, 35.

Rumex, polyploidy in, A., III, 381. Ruminants, digestion in, A., III, 539. Rust, detection of, on iron and steel, C., 65.

yellow, in cereals, A., III, 384. See also Corrosion.

Ruthenium, antimonate, niobate, tantalate, and vanadate, lattice constants of, A., I, 195. Rutin, effect of, on capillary fragility in man, A., III, 526.

Rye-grass. See Lolium perenne.

\$140. See Demerol.

SX Aurigae, spectrum of, A., I, 161.

Saccharic acid, thallium diethyl, dimethyl, and diphenyl esters, A., II, 66.

Saccharin, determination of, C., 93.

Saccharinbenzenesulphonxanthylamide, A., II, 156.

Saccharomyces cerevisiae, breeding of strains of, A., III, 292.

resistance of, to low temperatures, A., III, 502. top-fermentation strain of, A., III, 841. vitamin requirements of, A., III, 559.

Saccharomyces ellipsoideus, effect of antiseptics on, A., III, 560.

Sacral cord, case of, A., III, 569. Sacrum, male, variations of, in relation to caudal anæsthesia, A., III, 785.

Safflowers. See Carthamus tinctorius.

Saffron, colouring-matters of, spectra of, absorption, A., I, 141.

2:2:6-Trimethyl-2:3acid. See Safranic dihydrobenzoic acid.

»Sagittarii, spectrum of, A., I, 51.

St. John's wort. See Hypericum perforatum. Salamanders, cold and heat as triploidyinducing agents in, A., III, 196.

See also Amblystoma punctatum and Triturus viridescens.

Salepmannan. See under Mannans.

Salicylaldehyde, 5-mono- and 3:5-di-bromo-, condensation of, with malonic acid, A., II, 98. Salicylic acid, bacteriostatic and biochemical

action of, A., II, 378; III, 844. benzyl ethers, rearrangement of, A., II, 100. orivatives, hypoprothrombinæmia after dosage with, in man and rabbits, A., III, 10. derivatives.

determination of, in blood-plasma, C., 126.

in hair lotions, C., 37. formation of, by oxidation of o-cresol, A., II,

methyl ester, absorption and excretion of, A., III, 213.

salts, in urine, after dicumarol, non-appearance of, A., III, 834.

prothrombinopenic effect of, in man, A., III, 96.

sodium salt, effect of, on enzyme systems, A., III, 501.

spectrum of, Raman, in benzene and in dioxan, A., I, 164.

therapeutic action of, A., III, 209.

Salicylic acid. 3-bromo-, methyl ester, A., II, 55.

5-bromo-, and its ethers, rearrangement of, by hydrolysis of the bromomagnesium salts, A., II, 295.

3:5-dichloro-, \(\beta\)-naphthylmethyl ester, A., II, 100.

3:5-dichloro-, and 5-nitro-, benzyl esters, A., II. 100.

Salicylidenemalonic acid, 5-bromo-, A., II, 98. 3:5-dibromo-, A., II, 99.

Salicylnicotinylamide, and its bacteriostatic and biochemical actions, A., II, 378; III, 844.

4-Salicyloxy-3-phenylcoumarin, A., II, 345. Saligeninodihydromyrcene, A., II, 22.

Saliva, acid-tolerant micro-organisms from, A., III, 561.

human, frothing and viscosity of, A., III, 611. See also Glands, salivary.

Salkowski's reaction, A., II, 264.

Salmo fario, heart development in, A., III, 318. Salmo salar, developmental stages in, recognition of, A., III, 571.

Salmon, breeding characters of, in relation to their size, A., III, 570. sockevc. See Oncorhynchus nerka.

See also Salmo.

Salmonella, bacteræmia from, with meningococcal meningitis, A., III, 299.

distinction of, from paracolon bacilli, medium for, A., III, 699.

infection by, in man, A., III, 224.

occurrence of, in Chicago State hospitals, A., III, 773.

species of, Florida, A., III, 224. urease activity of, A., III, 297.

variants of, A., III, 300.

Salmonella choleræsuis, infections by, effect on, of nicotinic acid, pyridoxine, sulphaguanidine, and thiamin, in pigs, A., III, 358.

Salmonella dublin, gastro-enteritis due to, A., III, 699.

Salmonella inverness, A., III, 847.

Salmonella mississippi, A., III, 437.

Salmonella pullorum, bacteriophage of, electron microscopy of, A., III, 700. multose fermentation of, A., III, 77.

Salmonella typhimurium, antigenic complex of, A., III, 224.

endotoxin of, reaction of moccasin venom with, A., III, 563.

Salmonellosis, public heath aspects of, in wartime, A., III, 847.

treatment of, with Salpingitis, gonorrhœal, œstrogens, A., III, 736.

treatment of, with sulphanilamide and sulphathiazole, A., III, 132.
Salpingography, in diagnosis and treatment of

female sterility, A., III, 32.

Salts, determination in, of water, C., 1.

equilibria of, solid-solution-vapour, A., I, 281.

exchange between ions of, and their radioactive isotopes in solution, A., I, 41. hydrated, structure of, A., I, 5.

mineral, analysis of, thermographically, C.,

molten, electrical conductivity of, and their mixtures, A., I, 63.

quaternary, formation of, steric factors in, A., II. 82.

solubility of, and their mixtures, in water, A., I, 35.

in carbamide solutions, A., I, 12. See also Metallic salts.

Salting-out effect, A., I, 104.

Salvarsan, physico-chemical properties of, in relation to distribution and retention in tissues, A., III, 213. therapeutic action of, A., III, 209.

Samarium, at. wt. of, A., I, 94.

Sands, glass, for making colourless glass, C., 62.

Sandalwood, red, constituents of, A., II, 45. Sandfly fever, in hospitals in Middle East, A., III,

rheumatic pyrexia and, A., III, 79.

Sandmeyer reaction, interpretation of, A., I,

253; II, 96. Santal Parganas, aboriginals in, diet and physique of, A., III, 197.

a-Santenequinone, A., II, 198.

Santenic acid, configuration of, A., II, 197.

d-cis-a-Santenic acid, and its anhydride, A., II, 198.

cis-alloSantenic acid, synthesis of, A., II, 101. Santenone, configuration of, A., II, 197.

d-Santenone, formation of, from π-aldehydocamphor, A., II, 197. -a-Santenone, and its semicarbazone, A., II,

197. Santenonequinone, rearrangement of, A., II,

374.

Santonin, A., II, 195.

synthesis of, compounds related to, A., II, 372.

 β - and ψ -Santonins, anthelmintic action of. See under Anthelmintics.

Santonin series, A., II, 55, 232. syntheses in, A., II, 195.

Sapoalbin, diffusion constant and particle size of, A., I, 243.

Sapogenins, A., II, 21, 343, 375.

Saponification equivalents, determination of, in dark-coloured oils, C., 94.

Saponins, A., II, 21, 343, 375.

cytolytic effect of, on walls of vessels, A., III, 242.

hæmolytic action of, compared with that of lysolecithin, A., III, 390.

Sarcoma, benzpyrene, formation of, effect of glyceraldehyde on, in mice, A., III, 747.

dibenzanthracene, mouse, long-term cultivation of, in vitro, A., III, 819. Emge, appearance, growth, and disappearance

of, effect of amino-acid injection on, in rats, A., III, 40.

factor producing, extractable from rat fibrosarcomas, A., III, 543. growth of, inhibition of, by folic acid, A., III,

See under Heart disease.

intradermal immunisation of mice against, from animal of same line, A., III, 120.

Jensen, nucleic acid metabolism in, action of X-rays on, A., III, 819.

transplanted, colloid osmotic pressure of sera of rats bearing, A., III, 121.

mouse, dibenzanthracene-produced, growth of, in chick chorio-allantoic membrane, A., III, 120.

osteogenic, transplantable, in mouse, A., III,

599.

Rous, cells, cultivated in vitro, A., III, 481. virus of, and its variations, infection of guinea-fowls and turkeys by, A., III, 480.

Rous no. 1, age, agent content, and structure of, A., III, 80.

inhibitors occurring in, A., III, 665.

recovery from, antibody formation after, A., III, 80.

spindle and giant cell, arising from precordial bodies, A., III, 668.

virus, growth of, in chick embryo, in absence of neoplasia, A., III, 480.

Sarcoma botryoides, A., III, 822.

Sarcoptes scabiei var. hominis, lethal action on, of benzyl benzoate, dimethylthianthren, and tetraethylthiuram monosulphide, A., III, 556.

Sarcosine, spectrum of, Raman, A., I, 4. Sarcosine anhydride, compounds of, cholesterol, A., I, 176.

Sargentodoxa cuneata, resin-tannin complex in cells of, A., III, 856.

Sausages, containing soya grits, analysis of, C., 82.

determination in, of cereals and legumes, C., 131.

Scabies, prevention of, A., III, 685 treatment of, with circa 42, A., III, 496.

with tetmosol impregnated soap, A., III, 758.

Scalds, in children, A., III, 283.

Scandenin, and its derivatives, A., II, 28.

Scandium, isotope, radioactive, γ-rays from, energy of, A., I, 1. Scandol, and its derivatives, A., III, 383.

Scars, post-radiation, treatment of, A., III, 284. Scardinius erythrophthalamus, A., II, 84.

Scarlatina. See Scarlet fever. sulphapyrimidine

Scarlet fever, epidemic, su prophylaxis in, A., III, 206. human sera from, A., III, 79.

lesions produced by streptococcal toxins in, A., IÑ, 149. morbidity of, and streptococcal carrier rates,

A., III, 149. toxin, immunity to, Bantu, A., III, 77.

treatment of, A., III, 828. Schairol, structure of, and its derivatives, A., II,

198. Scheelite, rare earths in, A., I, 48.

Scheminzky effect, muscle fatigue and, A., III,

18. Schick reaction in women and their infants, A.,

III, 697. Schistosoma mansoni, defective eggshell form-

ation by, in infected guinea-pigs, A., III, 825. Schizophrenia, acute, in childhood, A., III, 528. effect of oxygen lack in, A., III, 403.

language in, A., III, 646. lobotomy in, A., III, 801.

resistance to insulin stupor in, A., III, 403.

308 Sciatica, pain in, diagnosis of, A., III, 177. treatment of, A., III, 177. Sclerosis, amyotrophic, lateral, primary and symptomatic, A., III, 643. treatment of, with vitamin E, effect of, on nervous system, A., III, 102. Scopolamine, use of, in labour, A., III, 496. τ-Scorpii, spectrum of, A., I, 50. Scorpion. See Buthus tamulus, and Palamneus fulvipes. Scotometry, rod, form and character of, A., III, Scrotum, thermo-regulatory function of, effect of testosterone propionate on, in rats, A., III, 741. Scurvy, ancemia during, effect of iron in, A., III, 162.condition like, production of, by feeding compound related to ascorbic acid, A., III, plasma-fibrinogen in, in guinea-pigs, A., III, 488. Scyphomedusæ, neuromuscular facilitation in, A., Ill, 399. Seas, polar, sediments of, A., I, 293. Sea-cucumber. See Thyone briaereus. Sea-sickness, chronic, A., III, 192. remedies for, A., III, 684. Sea-slug. See Aeolis pilata. Sea-water. See under Water. Sea-weeds, Australian, agar from, bacteriological tests of, C., 186. Seams, welded, detection in, of gas inclusions, Sebacic acid, glycidyl ester, A., II, 91. Secale cereale, seeds, hybrid, with Hordeum jubatum, A., III, 852. Secretin, effect of, on pancreatic function, in infants and children, A., III, 255. Secretion, morphology of, A., III, 573. physical chemistry of, A., III, 363. Sediments, Barentz Sea, A., I, 294. critical shear stress exerted on, by flowing fluids, A., I, 81. Dead Sea, bacteria in, A., I, 294. lake, A., I, 112. from Indian Tibet, A., I, 24. polar sca, manganese and phosphorus in, A., I, 293.sandy silt, granulo-morphological analysis of, A., I, 24. Sedimentation analysis. See under Analysis. Sedimentometers, C., 54. Seeds, dehydrated, vitamins in, A., III, 43. germinating, enzymes of, A., III, 366, 612. reduction by, of tetrazolium salts, A., III, vitamin-B in, A., III, 441. germination of, effect of sulphanilamide on, A., III, 515. leguminous, fat metabolism in, A., III, 310. resistance of, to high temperature, in relation to food reserve, A., III, 228. Seed oil. See under Oils. Seizures, audiogenic, absence of, in wild Norway and Alexandrine rats, A., III, 337. noise-induced, in rats, modified by cerebral injury, A., III, 337. psychomotor, treatment of, with dl-glutamic acid hydrochloride, A., III, 725. Selenic acid. See under Selenium. Selenite, ancient uses of, A., I, 47. Selenium, toxicity of, fed to rats, A., III, 556. Selenium dioxide, oxidation with, A., II, 57, 89. of, with camphor reaction

a-substituted derivatives, A., II, 343.

selenate and water, A., I, 250.

determination of, in foods, C., 32.

r-Selenoacetic-a-propionic acids, A., II, 322.

microchemically, C., 160.

in sulphur, C., 160. in urine, C., 177.

C., 160. Selenium determination

Selenocarbamides, preparation of, from carbodimides, A., II, 216. -Seleno-αβ-dipropionic acid, A., II, 322. Semecarpus anacardium, oil, contact dermatitis due to, A., III, 852. Semen. See Seminal fluid. Semi-conductors, photo-electric, secondary electrons from, A., I, 161. Seminal fluid, amphibian, A., III, 112. bull, density of, standardisation of, A., III, 656; C., 176. pH change in, after incubation, A., III, 656. number of spermatozoa in, C., 176. electron microscope for study of, A., III, 345. fowl, production of, effect of illumination on, A., III, 191. guinea-pig, electrical production of, and character of ejaculate in, A., III, 813. human, care of, A., III, 472. inadequacy of, A., III, 33. sea urchins', electron microscopy of, A., III, 521. spermatozoa number in, determination of, A., III, 656. starling's, production of, stimulation of, by coloured illumination, A., III, 191. transport rate of, in human uterus and tubes, A., III, 594. Seminal plasma, spectrum of, absorption, ultraviolet, in man, A., III, 594. Senecic acid, A., II, 27. Senecio alkaloids, A., II, 26. Senecioic acid, γ -bromo-, methyl ester, A., II, 287. Senecionitrile, y-bromo-, A., II, 287. Senility, acuity in, lowered, causes of, A., III, Senna, cathartic action of, in mice, A., III, 681. Sensitometer, for testing process materials, C., 99. Sensory perception, in relationship of individual and environment, A., III, 246. Separation tube for separation of molecules of equal masses, A., I, 89. Separators, C., 53. Sepiolite, fibrous, Yavapai Co., Arizona, A., I, Sepsis, puerperal, due to hæmolytic streptococci, A., III, 699. Septicæmia, Friedlander's, meningitis and, A., III, 74. staphylococcal, hæmolytic, treatment of, with penicillin, A., III, 276. treatment of, with sulphapyrimidine, A., III, 679. Staphylococcus aureus, treatment of, with penicillin, A., III, 827. Sequoia gigantea, tetraploidy in, colchicineinduced, A., III, 381.
Sericea lespedeza. See Lespedeza cuneata. Serine, deamination of, biologically, A., III, 146; C., 41. Serine dehydrase. See under Dehydrase. Serology of simple substances, A., III, 622, 779. Serpentine, pseudomorphs of, after actinolite, A., I, 296. reactions of, with superphosphate, A., I, 47. Serratia marcescens, colour variants of, A., III, 773. culture filtrates of, skin reactivity to, and their relation to Shear polysaccharides, A., III, 666. from meningitis, A., III, 149. Serratus anterior, paralysis of, after glandular fever, A., III, 157. and its Serum-globulin. See under Globulin. oxychloride, acid-base reactions in, A., I, 130. Selenic acid, equilibrium of, with magnesium Serum-sickness, in sulphonamide therapy, A., III, 557. Selenious ions, adsorption of, by precipitates, Sesamin, determination of, C., 137. Sesquiterpenes, A., II, 125, 150, 268, 374. Sesquiterpene alcohols, from French lavender oil, and their allophanates, A., II, 268. Sewage, analysis of, in army camps, C., 138. determination in, of iron, C., 89. of sulphates, C., 89. of suspended solids, C., 38.

Sex, maturity in, attainment of, in albino rat, determined by copulatory response, A., III, Sexual receptivity, induction of, by ostrogen-progesterone in spayed mice, A., III, 594. Sexuality, in male mammals, A., III, 809. Shale, carcinogenicity difference between shale oil and, A., III, 820. oil, deposits, Cambrian, Freshford, and Waitati, A., I, 136. Nevis deposits, Otago Central, A., I, 136.Orepuki, A., I, 48. thermal analysis of, C., 114. Shale oil, carcinogenic constituents of, A., III, carcinogenicity difference between shale and, A., III, 820. Shark, frilled. See Chlamydoselachus anguineus. liver of. See under Liver. Sharqiya, people of, physical measurements and serology of, A., III, 320. Sheep, breeding season in, A., III, 654. carbohydrate digestion in, A., III, 33. English breeds, blood value of, in relation to constitutional characters, A., III, 238. fertility in, A., III, 189. fleece and skin of, biology of, A., III, 233. healthy and bush-sick, cobalt content of organs of, at Glenhope, New Zealand, A., IIĬ, 420. Wensleydale breed of, genetics of, A., III, 319. Sheet materials, gas transmission through, apparatus for measuring, C., 73. water-vapour permeability of, C., 202. Shellac, A., II, 179. constitution of, A., II, 284. Shigella, group, arabinose-fermenting bacterium of, A., III, 563. species differentiation of, by reduction of trimethylamine, A., III, 847.

Shigella alkalescens, trimethylamine formation from choline by, A., III, 699. Shigella ceylonensis and dispar, antigenic relationships of, A., III, 149. Shigella dysenteria, infection with, protection against, by bacteriophage, A., III, 150. Shigella paradysenteriæ, growth factors for, nicotinic and pantothenic acids as, A., III, 506. strain of, requiring uracil, A., III, 773. Shivering, physiology of, A., III, 18. Shock, adenosine compounds and phosphates in blood in, in rabbits, A., III, 797. ætiology and treatment of, A., III, 173. after fever therapy, treatment of, with plasma, A., III, 173. analysis of, A., III, 641. anuria in, A., III, 720. biochemistry of, A., III, 397. blood-amino-acid nitrogen changes in, A., III, 721. body temperature in. A., III, 577. clinical view of, A., III, 577. cocarboxylase, dephosphorylation in tissues during, A., III. 397. croton oil, A., III, 61, 62. due to bleeding in dogs, A., III, 173. due to burns. See under Burns. due to clamping, carbohydrate reversibility in, in rats, A., III, 677. due to intraperitoneal implantation of muscle, A., III, 577, 641. due to muscle trauma, A., III, 398. dynamics of, and clinical implications, A., III, electric. See Electric shock. experimental effect of replacement therapy in, A., III, 243. treatment of, effect of adrenal cortex preparations in, A., III, 535. with oxygen, A., III, 458. with reference to plasma-potassium changes, A., III, 243. external temperature and, effect of, A., III, gravity, in rabbits, A., III, 324.

in ferrosilicon, C., 157.

Shock, hæmorrhagie, A., III, 243, 720. carbohydrate and protein metabolism during, A., III, 397. effect of, on hypertensinogen and renin concentration in plasma in dogs, A., III, effect on, of body movement, A., III, 720. of gelatin infusion, A., III, 11. of morphine, A., III, 395. of potassium phosphate injected in dogs, Ā., III, 17. of saline, heparinised plasma, and washed red cells, A., III, 798. hydrolysed protein in, A., III, 95. metabolic changes during, role of liver in, A., III, 397. oxygen consumption of kidney and liver during, A., III, 397. production of, in dogs, A., III, 576. reactions of aorta in, A., III, 244. survival time in, influence of hyperthermia and hypothermia on, in dogs, A., III, 720. tissue-thiamin in, A., III, 526. treatment of, with oxygen, A., III, 458. impending, symptoms of, A., III, 457. in peptic ulcer, A., III, 346. irreversibility of, A., III, 17. isinglass as blood substitute in, A., III, 11. mechanism of, A., III, 457. Noble-Collip, therapeutic effects of autonomic depressants in, A., III, 134. physiology of, blood substitutes and, A., III, 524. pituitrin, A., III, 809. during cyclopropane anæsthesia, A., III, prevention of, with pectin solutions, A., III, 798. skin circulation in, A., III, 798. survival of non-adrenalcctomised rats in, with and without adrenal hormone treatment, A., III, 251, 653. syndrome of, variability of, in toxic drug shock, A., III, 17. temperature in, A., III, 397. traumatic, capillary permeability in, A., III, 173. influence of sympathetic nervous system on, A., III, 457. experimental, A., III, 577. fluid loss in, measurement of, A., III, 720. pathology of, A., III, 328. treatment of, with oxygen, A., III, 398. treatment of, A., III, 173, 457. blood substitutes used in, A., III, 577. heat in, A., III, 244. pectin solutions in, A., III, 173, 798. substitutes for human blood and plasma in, A., III, 457. with adrenal cortex extract and paredrine, A., III, 28. with human serum-albumin, A., III, 794. with plasma and scrum-protein solutions, A., III, 11. Shortening. See Fats. Shrew, brain of. See under Brain. Sicalis flaveola holti, genitals of, effect of diethylstilbæstrol on, A., III, 593. Sickle-cell disease. See under Anæmia. Sierre region, hydrology of, A., I, 293.

Sigartina agardhin, A., II, 85.

Sigmodon hispidus hispidus, maturation and estrous cycle of, effect of light on, A., III, 593. nutrition of, A., III, 421. Sigmoidoscopy preceding barium enema, in colon study, A., III, 412.
Silage, brown from Atlas sorgo, chemical composition and digestibility of, determined by feeding to cows, A., III, 418. separation of β-carotene, neo-β-carotene, and xanthophyll from, C., 90. Silane, derivatives of, A., I, 256. Silane, fluoro-derivatives, A., I, 256. Silica. See Silicon dioxide. Silica gel, absorption by, of nitrous gases, A., I,

35.

of organic acids, A., I, 123.

Silica gel, diffusion experiments with, A., I, 220. Silicon detection and determination :sorption and surface area in, A., I, 35. determination of, in magnesium, photoelectrically, C., 9. thermal constants of, A., I, 168. Silicates. See under Silicon. Silicic acid. See under Silicon. in magnesium and its alloys, photometrically, C., 8. in silicon brass, C., 62. in silumin, C., 9. Silicon, diffusion of, in aluminium, A., I, 150. powdered, lattice parameter of, A., I, 270. Silicon alloys, with aluminium, precipitation of spectrochemically, C., 61. spectroscopically, C., 62. silicon from, A., I, 221. with aluminium, iron, and manganese, A., Silicon brass. See under Brass. Silicosis, in Switzerland, and workmen's com-I, 9. pensation, A., III, 62. with copper and iron, equilibrium of, A., I, 220.treatment of, with aluminium powder, A., III, with iron, magnetisation of, A., I, 271. 611. with iron and nickel, A., I, 10. Silk, artificial, rayon, viscose, analysis of, in mixtures with cotton, C., 71.

Silk fibroin, acetylation and methylation of, A., Silicon compounds, purification of, A., I, 45. Silicon arsenates, A., I, 22. II, 283. carbide. See Carborundum. tetrachloride, preparation of, and of silicie acid hydrolysis of, A., II, 356. esters therefrom, A., I, 291. hydroxylamino-acid residues in, etherification preparation of, with hot-cold tube, A., I, of, by dimethyl sulphate, A., II, 68. 230. structure of, and of polyamides, A., I, 270. Silkworms, arsenic disposition in, determination of, A., III, 348. deuterides, vapour pressure of, A., I, 8. halides, redistribution reactions in, A., I, 228. polyhedral disease of, virus protein of, A., III, hydrides, vapour pressure of, A., I, 8. 621, 702. iodate, solubility of, in aqueous ammonia, A., I. 127. Sec also Antheraea pernyi. dioxide, adsorption by, of alkalis, in presence of neutral salts, A., I, 151. Sillenite, A., I, 136. Silumin, analysis of, by steeloscope in visible amorphous, precipitated, effect of, on lung light, C., 61. tumour incidence in mice, A., III, 663. determination in, of silicon, C., 9. analysis of, with perchloric acid, C., 109. quality of, determination of, metallographically, C., 61.
Silumin electrodes. Sec under Electrodes. density of melts of, with boric oxide, A., I, Silver, binding of, by proteins, and by organic determination of, in alumina cement, C., 9. nitrogen compounds, A., II, 208. in industrial dusts, C., 62. in iron ores, C., 9. colloidal, sols, A., I, 13. in slags, ultrafiltration in, C., 61. equilibrium of, with alumina and lead electrodeposition of, electrode polarisation in, A., I, 203. equilibrium of, with its molten fluoride, A., I, oxide, A., I, 128. with alumina and lithium oxide, A., I, films, reflexion at, polarisation change on, 128. solution energy of, in hydrochloric acid and water, A., I, 283. A., I, 142. ions, complex, with pyridine, A., I, 127. Silicic acid, colloidal, gels, A., I, 152. ionisation cross-section of L_{III} state of, A., I, diffusion in, A., I, 197. 185. optical properties of, A., I, 173. nuclear scattering cross-section for, A., I, detection of, colorimetrically, C., 109. 263.determination of, in water, colorimetrically, solubility of, in thiocarbamide, A., I, 35. C., 2. Silver alloys, electrical resistance of, A., I, 86. with aluminium, ageing of, A., I, 10. Silicates, chemistry of, A., I, 110. determination in, of alkalis, C., 153. with antimony and lead, A., I, 57. in aluminates containing chromium and with gold, analysis of, spectrochemically, fluorine, C., 9. C., 5. with magnesium, constitution of, A., I, 33. formation of, catalysed by sodium chloride, A., I, 180. with mercury, native, A., I, 72. thixotropy in, A., 1, 276. mineral, gelatinising with acid, structure of, A., I, 136. Silver compounds, complex, with proteins, A. polymers of, A., I, 276. III, 687. relation of, to phosphates and sulphates, Silver salts, analysis of, C., 59. A., I, 54. Silver arsenate, reaction of, with sodium chloride, A., I, 89. velocity of crystallisation of, in relation to azide, reaction of, with chlorine azide, A., I, pressure, A., I, 7. Silicon organic compounds, A., II, 130. Silicon chloroisocyanates, A., I, 231. bromate, equilibrium of, with sodium bromate and water, A., I, 225; C., 194. dimethyl dichloride, molecular structure of, A., I, 119. ethyl fluorides, A., II, 383. bromide, crystals, lattice energy and related quantities for, A., I, 21. methyl trichloride, molecular structure of, equilibrium of mixed crystals of silver A., I, 119. chloride and with bromide-chloride ions, phenyl fluorides, A., II, 383. triethyl chloride, hydroxide, and oxide, A., I, 17. perchlorate, reaction of, with methyl iodide, electric moments of, A., I, 53. A., I. 252. trimethyl chloride, A., II, 316. spectrum of, Raman, in toluene and water, triphenyl hydroxide, electric moment of, A., A., I, 97. Ĩ, 53. chloride, crystals, photographic effects with, Silicic acid, chloro-ortho-esters of, synthesis of, A., II, 191. A., I, 21. determination of, gravimetrically, C., 195. Silicon detection and determination :halides, adsorption by, of erythrosin, A., I, detection of, with steeloscope, C., 8. determination of, in acid-resisting high-silicon iron, C., 66. hydride, spectrum of, band, A., I, 140. iodide, colloidal, sols, effect of electric field on, in aluminium alloys, C., 8, 61. A., I, 246. in cast iron, C., 147. electrical conductivity of, in ethylenein east iron and steel, C., 66. diamine, A., I, 129. nitrate, decomposition potential of, A., I, 40. in copper-base alloys, photometrically, C., electrical conductivity of, in ethylene-

diamine, A., I, 129.

Silver nitrate, transport numbers of, in presence of sucrose, A., I, 18.

oxide, reaction of sulphur with, A., I, 255. phosphate, reaction of, with sodium chloride, A., I, 89.

sulphide, catalytic action of, A., I, 227, 228. thiosulphate, complexes of, in aqueous solution, A., I, 37.

Silver organic compounds :-

Silver ethyl, methyl, and n_r propyl, A., II, 207. ethylenediguanide hydroxide, and its salts, A., I, 230.

Silver detection and determination :-

detection of, C., 5.

determination of, by luminescence titration, C., 142.

in anode sludge and in copper, C., 5. in gold, spectroscopically, C., 59.

in photographic emulsions, C., 154. Singing, mechanism of, A., III, 727.

Sinus venosus, action potentials of, effect of bile salts on, in frogs, A., III, 169.

valves of, transformation of, in mammals and man, A., III, 711.

Siphon, automatic, C., 145.

Sirius, growth curve of, A., I, 49.

Sitaparite, A., I, 92, 260.

Sitostanone, 2:4-dinitrophenylhydrazone, A., II,

Sitosterol, oxidation of, with Oppenauer's reagent, A., II, 79.

 β - and γ -Sitosterols, side chains of, A., II, 196. Sizes, rosin, analysis of, C., 73.

Sizing of paper, C., 170.

Skeleton, ageing and growth of, influence of endocrine glands on, A., III, 249.

caudal, formation of, after transplantation, A., III, 387.

human, circumnatal, embryonic, and fœtal, developmental anatomy of, A., III, 233, 710.

embryonic and feetal, staining of, A., III, 710.

Skin, absorption by, principles of, A., III, 62. articular hyperlaxity, fragility, and hyper-elasticity of, syndrome of, A., III, 259. burns. See under Burns.

creases and folds of, during childhood, A., III, 785.

cysts and cystic tumours of, A., III, 123. defect of, congenital, in newborn infant, A., III, 157.

determination in, of electrolytes, nitrogen, and

water, C., 79. disinfection of, iodine application for, C., 194. electrolyte, nitrogen, and water distribution in, A., III, 194.

fluorescence of, and organs, dermofluorometer for measurement of, A., III, 171.

fœtal lamb, extra-uterine aseptic autolysis in,

A., III, 38. foot. See under Feet.

grafting of, refrigeration, anæsthesia in, A., III, 211.

hand. See under Hands.

human, ageing of, A., III, 233.

hypersensitivity of, to sulphathiazole, A., III, 133.

lesions of, penicillin application in, A., III, 678.

oxygen consumption of, during hair cycle in white rat, A., III, 273. effect of hydrogen peroxide on rate of, in

frogs, A., III, 273. pain spots in, structural identity of, in man,

A., 111, 806. penetration of sulphonamides into, A., III,

277. reactivity phenomenon of, to Serratia

marcescens, A., III, 666.

reflex of, galvanic, A., III, 259.

sensitisation of, to sulphathiazole, A., III, 133, 830.

sensitisation studies on, A., III, 152.

sensory units of, effect of electrical stimulation on, A., III, 106.

response of, to electrical stimulation, A., III, 178.

Skin, sheep, biology of, A., III, 233. wounds of. See under Wounds. See also Epidermis, Epithelium, etc. Skin diseases, cancer of, A., III, 667, 668. induced by methylcholanthrene, A., III,

477. suppression of, A., III, 349. melanomas of. See Melanomas, cutaneous.

treatment of, with penicillin, A., III, 678. See also Dermatitis, Eczema, etc.

Skraup, Zdenko Hans, 1850—1910, A., I, 69. Skraup reaction, application of, to 3-nitro-4aminoveratrole, A., II, 131.

Skull, chordomas of, eye and nerve symptoms in, A., III, 532.

defects of, repair of, by cast chip-bone grafts, A., III, 786.

with tantalum, A., III, 157.

growth of, role of sutures in, A., III, 569. identification of, by X-ray pictures of frontal

sinuses, A., III, 1.
Indians and Whites, variability of, A., III, 91.

myeloma of, A., III, 821.

suboccipital-bregmatic circumference of, in new-born, A., III, 445.

nostosis of, premature, operation for prevention of blindness and other sequelæ operation for synostosis of, from, A., III, 2.

See also Head.

Sky, night, light of, photo-electric photometry of, A., I, 51.

spectrum of, A., I, 51.

spectrum of, A., I, 2. luminescence, A., I, 93.

ultra-violet, nitrogen in, A., I, 115. oxygen in, A., I, 52.

yellow line in, absorption of, by sodium vapour, A., I, 209.

Slag, acid, determination in, of chromium, C., 12.

determination in, of silica, ultrafiltration in, C., 61.

welding, minerals in, A., I, 71.

Slavs, origin of, A., III, 628.

Slave-trade, effect of, on spread of tropical disease, A., III, 436.

Sleep, produced by pentobarbital sodium, duration of, in normal and castrate cats, A., III, 495.

Sleeping-sickness, drugs for, efficacy of, bloodbrain barrier and cerebrospinal fluid in relation to, A., III, 213.

Sleeplessness. See Insomnia.

Slip coefficients, measurement of, A., I, 197.

Smallpox, culture media in, chick membrane as, A., III, 304.

diagnosis of, with chorio-allantois of chick embryo, A., III, 850.

vaccine, treatment with, of herpes zoster ophthalmieus, A., III, 644.

variola virus, propagation of, in embryonated eggs, A., III, 152.

transformation of, into vaccinia virus, A., III, 778.

Smell, sense of, discrimination in, after thalamic nuclei destruction in rats, A., III, 647.

Smoothness of surfaces, appraisal of, C., 55. Snails. See Thais floridana.

Snow, isotopes in, A., I, 262.

Soaps, cationic, formation of non-perceptible films on hands by, A., III, 359. crystalline forms of, A., I, 120.

determination of, in detergent bars, C., 122. dispersions, mineral oil, fibre structure of, A., I, 200.

equilibria of, with water, phase diagrams and vapour pressure of, A., I, 62.

impregnated with tetmosol, treatment with, of scabies, A., III, 758.

invert, A., II, 90, 95, 98, 111, 112, 115, 184, 204, 309, 313; III, 515.

kettle, determination in, of glycerol, C., 171. production of, evaluation of greases and tallow for, C., 121.

sodium, physical states of, A., I, 32. recrystallisation of, in mineral oils, A., I, Soaps, sodium, sedimentation volumes of, in

mineral oils, A., I, 103. surface tension of, in mineral oil dispersions, A., I, 58.

wetting power of mineral oil systems of, A., I, 58.

transparent, structure of, A., I, 195.

Soap products, detection in, of bicarbonates, C.,

Soap solutions, aqueous, dialysis of, A., I, 14. colloidal micelles and solubilisation in, A., I, 125.

constitution of, A., I, 14.

mechanical properties of, and structure, A., I,

spectra of, absorption, ultra-violet, A., I, 140. structure of, A., I, 172.

X-ray, A., I, 173.

Soapwort, white, sapoalbin of, diffusion constant and particle size of, A., I, 243.

Sodamide, syntheses with, A., II, 201.

Sodium atoms, nuclei, neutron and proton emission from, A., I, 75.

decay of, to neon, A., I, 1.

spectrum of, Stark effect in, A., I, 233.

vapour, reaction of, with unsaturated halides, A., I, 285.

Sodium compounds, purification of, A., I, 45. Sodium salts, effect of, on sulphacetamide activity, A., III, 679.

protective effect of, in anæsthesia, A., III, 833.

Sodium aluminate, heat of formation of, A., I, 86.

aluminium silicate, equilibrium of, with calcium aluminosilicate and silicate, A., I, 128.

with calcium silicate and sodium metasilicate, A., I, 250.

azide, action of, on microbic growth and respiration, A., III, 694.

diborate, determination in, of iron, with sulphosalicylic acid, C., 65. borates, A., I, 44.

bromate, electrical conductivity of, A., I, 283.

equilibrium of, with silver bromate and water, C., 194.

bromide, equilibrium of, with potassium bromide and water, A., I, 63.

with sodium chlorate and water, A., I, 225.

with sodium chloride and water, A., I, 86.

bromide, fluoride, and iodide, equilibrium of, with potassium bromide, fluoride, and iodide, A., I, 177.

carbonate, analysis of, and of its mixtures with bicarbonate, C., 3.

equilibrium of, with potassium carbonate and water, A., I, 155.

with potassium chlorate, equilibrium of, chlorate and potassium and sodium chlorides, A., I, 128. with sodium bromide, sodium iodide,

· sodium nitrate, and water, A., I, 225. spectrum of, Raman, A., I, 213.

chloride, coloured sheets of, photodichroism of, A., I, 218.

concentration of, blood coagulation and, A., III. 165.

determination of, in egg products, C., 31. in fine-ground feeding-stuffs, C., 32.

effect of, on injected glucose disposition in rats, A., III, 275. electrical conductivity of, in solution,

temperature coefficients of, A., I, 155. equilibrium of, with lead chloride and water,

A., I, 250. with potassium and sodium chlorates

and potassium chloride, A., I, 128. with sodium bromide and water, A., I, 86.

fusion diagram of, with sodium chromate and fluoride, A., I, 86.

heat of dilution of, in ethylene glycol, A., I, 155.

iodised, determination in, of iodine, C., 32.

Sodium chloride, solutions, effect of, on survival time of dogs in hæmorrhagic hypotension, A., III, 720.

spectrum of, Raman, A., I, 142.

treatment with, of burn shock, A., III, 721. chromate, equilibrium of, with sodium nitrate and water, A., I, 250.

fusion diagram of, with sodium chloride and fluoride, A., I, 86.

cupribromide, use of, as microchemical reagent, C., 185.

deuteroxide, electrical conductivity of, in heavy water, A., I, 17.

fluoride, equilibrium of, with lithium and potassium fluoride, A., I, 38.

with magnesium and sodium fluorides, A., I, 38.

fusion diagram of, with sodium chloride and chromate, A., I, 86.

poisoning by. See under Poisoning.

hydrogen carbonate, analysis of, and of its mixtures with carbonate, C., 3. effect of, on gastric secretion, A., III, 656.

hydroxide, determination of, in glass, C., 105. reaction of, with niobium pentoxide, C.,

hypochlorite, as volumetric reagent in micro-analysis, C., 195.

decomposition of, A., I, 130. hypophosphate, preparation of, A., I, 256.

iodate, crystal structure of, A., I, 239. de, effect of, on partition, A., III, 524. blood-magnesium iodide,

equilibrium of, with sodium chlorate and water, A., I, 225.

solubility of, in aqueous sodium hydroxide A., I, 150.

lithium beryllofluoride, structure of, A., I, 79. nitrate, equilibrium of, with ammonium nitrate, A., I, 154.

with sodium chlorate and water, A., I, 225.

with sodium chromate and water, A., I,

spectra of, Raman, and crystal structure,

A., I, 165.

nitrite, action of charcoal on, A., I, 231. crystals, high-temperature form of, A., I 239.

preparation of, A., I, 181.

oxide, compounds of, with metallic oxides, A., I, 206.

with phosphorus pentoxide, A., I, 80.

peroxytitanate, A., I, 68. peroxyuranate, A., I, 68.

phosphate, equilibrium of, with sodium pyrophosphate, A., I, 85. solutions, sulphur dioxide solubility in,

A., I, 244.

metaphosphate, Kurrol's, A., I, 43. vitreous, effect of heat on, A., I, 229.

pyrophosphate, anhydrous, commercial, analysis of, C., 153.

Disodium hydrogen phosphate heptahydrate, specification of, C., 196.

Sodium sulphate, crystal lattice of, anion rotation in, A., I, 57.

formation of, catalytically from chlorides, A., I, 288.

fused, electrolysis of, A., I, 181.

decahydrate, preparation of, from astra-khanite, A., I, 43.

sulphide, reactions of, with tissues, A., III, 202.

polysulphides, reaction of, with p-nitro-toluene, A., II, 101.

sulphite, specific heat of, A., I, 147.

thiosulphate, action of, on blood clotting, A., IIÎ, 10.

determination of, in photographic prints, C., 124.

pentahydrate, heat of solution of, in relation to temperature, A., I, 178.

Sodium organic compounds :-

alkyl sulphates, concentration-Sodium surface tension curves of, A.. I, 124. determination of, by hydrolysis with potassium benzyloxide, C., 166.

Sodium organic compounds :-

Sodium alkyl sulphates, surface tension of, at oil interfaces, effect of electrolytes on, A., I, 124.

treatment with, of disease, A., III, 656. of gastroduodenal sec.-alkyl sulphates, interfacial tension of

solutions of, against oils, A., I, 83. lauryl sulphate, as pepsin inhibitor, A., III,

mercurochrome, aqueous solutions of, and their coagulation, A., I, 247.

sulphonates, petroleum oil-soluble, analysis of, by absorption, C., 69.

triphenylmethide, apparatus for use with, Č., 197.

triphenylmethyl, reaction of, acetylenic esters, A., II, 133. with esters of aβ-unsaturated acids, A., II, 99.

Sodium detection and determination: detection of, microscopically, crystalline picrolonates, C., 105. their

determination of, C., 3. by zinc uranyl method, A., I, 69. in aluminium, spectrographically, C., 105. in aluminium and its alloys, C., 2. in magnesium and its alloys, C., 57. in potassium hydroxide, C., 154. in water, with zinc uranyl salts, C., 39. microchemically, by spectral analysis, C., 153.

wet mineralisation in, C., 154. Softening point, ring and ball test for, C., 56. Soils, acidity of, determination of, indicator for,

C., 187. effect of carbon dioxide on, C., 40. Asia Minor, colloid chemistry of, A., I, 72. bacteria in, adsorption by, A., III, 770.

aerobic mesophilic, cellulose decomposition

by, A., III, 72.
enzymes from, oxidising p-aminobenzoic
and anthranilic acids, A., III, 145. nitrifying, A., III, 616.

cation absorption by plants in, A., III, 853. fertiliser requirements of, C., 40. formation and stratification of, A., I, 72. fungi in, A., III, 290. development of, A., III, 290.

granite, coloration of, in south-eastern

Piedmont, A., I, 259. Iowa and New England, detection in, of clay minerals, A., I, 72.

Ivory Coast, chemicomineralogy of, in relation to climate, A., I, 184.

Missouri, fertility needs of, soil tests for, C..

"moisture equivalent" of, C., 187. paddy, Bengal, fungi of, A., III, 219. sampling of, in relation to testing, C., 39. sandy diluvial, water capacity of, C., 187. Saö Paulo, analysis of, by X-rays, A., I, 72. sub-Iowa, fertility of, in relation to phosphorus, A., I, 72.

U.S.S.R., radioactive elements in, A., I, 296.

absorption and transmission by, water pressure-plate apparatus for measuring, C., 187.

yeast in, A., III, 614.

Soil analysis :-

analysis of, mechanical, by densimeter method, C., 187.

notation of data for, C., 187.

microchemically, C., 187. determination in, of boron, C., 90. of carbon, C., 139.

of exchangeable bases and hydrogen, C., 89. of pH, C., 40.

effect of moisture on, C., 188. of lactate-soluble phosphate, with "Photo Rex," C., 188.

of molybdenum, C., 139. of oils, (P.), C., 164.

of replaceable aluminium and T-S, C.,

of water, C., 89.

by electrical capacitance, C., 40.

Soil extracts, determination in, of sulphates, C., 2, 39.

of sulphur, A., I, 69. alloSolanidan, A., II, 282.

Solanidan-3(a)-ol, and its acetate, A., II, 282. alloSolanidan-3(a)- and -3(β)-ols, and their

acetates, A., II, 282. Δ^2 -(or Δ^3 -)alloSolaniden, A., II, 282.

Solanidine, p-toluenesulphonate, A., II, 282. Solder, silver, determination in, of lead, C., 62. substitute, in foods, toxicity of, C., 82.

toxicity of, in canned food containers, C., 32.

Solids, attractive energy of, extended into films or liquids, A., I, 83.

chemical reaction and self-diffusion in, with radon as indicator, A., 1, 179.

coalescence and cohesion in, A., I, 199. deformation of, A., I, 120:

diffusion of excess energy in, A., I, 237.

diffusion of gases into, A., I, 35. dipolar, dielectric properties of, A., I, 237.

disperse structure of, A., I, 200, 241.

effect on, of rotating electric fields, A., I, 79. exchange reactions between liquids and, A., I, 179.

heat of adsorption of vapours on, in relation to heat of immersion of the solid, A., I, 83. identification of, by powder diffraction, C., 196.

miscibility of, equilibrium pressure during, A., I, 102.

reactions of, A., I, 22, 45, 180, 290. structure and properties of, A., I, 173.

surfaces of, A., I, 222.

cross-section of molecules adsorbed on, A., I, 199.

energy- and order: states of atoms in, A., I, 193.

Solubility, curves, line co-ordinate representation of, A., I, 150.

of aliphatic higher nitriles, A., I, 122.

of aliphatic higher primary amines, A., I, 123. of higher aliphatic ketones, A., I, 12.

Solubility product, determination of, potentio-metrically, A., I, 103.

Soluseptasine, antihæmolytic action of, A., III, 278.

Solutions, analysis of, spectrochemically, C., 5. aqueous, electrical conductivity of, A., I, 283. f.p. and isotonic concentrations of, graphic methods for calculating, A., III, 497.

ionic, adiabatic compressibility of, A., I, 81. nucleus formation in, A., I, 122. azeotropic, thermodynamics of, A., I, 225.

coloured, concentration of, photo-electric device for recording, C., 148. determination in, of acids, C., 1.

concentration and surfaco tension of, A., I, 171. control of conductivity, pH, and oxidation-

reduction potentials in, (P.), C., 50. dielectric constant, ionic equilibrium, and ionic force in, A., I, 126.

dilute, vapour pressure and viscosity of, A., I,

243.electrolytic, effect of pressure on, A., I, 223.

theory of, A., I, 154. oxygen-free, preparation and transfer of, C.,

polar-non-polar, thermodynamics of, A., I, 85. reaction kinetics in, A., I, 65.

solid. See Alloys. standard, evaporation of, in concentration,

C., 196. supersaturation limits in, A., I, 276. surface tension of, A., I, 278.

ternary, diffusion in, A., I, 275. Solvents, action of, A., I, 170.

organic vapour, determination of, in atmosphere, silica-gel method for, C., 88.

Somalin, pharmacology of, compared related cardiac glucosides, A., III, 210.

Soot, structure of, A., I, 145. Sorbaldehyde, ethynylcarbinol from, A., II, 177. Sorbitol, derivatives of, A., II, 119.

D-Sorbitol, di- and tri-benzoates, structure of, A., II, 210.

keto-D-Sorbose, pentancetate, and its oxime, A., II. 214.

Sorghum, grain, niacin, pantothenic acid, and riboflavin contents of, A., III, 603. inheritance of plant characters in, A., III, 84. Sorghum vulgare, hydrocyanic acid in, A., III,

vitamin- B_1 content of, A., III, 547.

Sound, absorption of, in gas mixtures, A., I, 121. in gases, measured with interferometer, A., 1, 197.

in ultrasonic region, A., I, 197.

physics of, in relation to general examination of patient, A., III, 244.

velocity of, in methyl alcohol-water mixtures, A., I, 198.

Soya beans, Biloxi, floral initiation in, A., III, 84.

constituents of, A., III, 379.

determination in, of oil, effect of humidity on,

equilibrium hygroscopicity of, A., III, 377. germinated, production of vitamins in, A., III, 751.

iron utilisation in, A., III, 228.

lecithin of. See under Lecithin.

vitamins in, A., III, 485.

Soya-bean extracts, proteolytic inhibitor for, A., 111, 840,

Soya-bean flour, feeding of bees with, A. III, 670.

protein nutritional value of, and its value as supplement to wheat flour, A., III, 749. Sova-bean oil, analysis of, C., 171.

Soya-bean plants, boron absorption by, A., III,

iron-manganese ratio in, A., III, 379, 441. Space, perception of, A., III, 726.

Sparrows, bill of, pigment deposition in, in

response to androgen test, A., III, 741. Spartium junceum, alkaloids of, A., III, 568. Spasmolytics, 9:10-dihydroanthracenecarboxylic

acid, A., III, 682. xanthene-9-carboxylic acid, A., III, 682.

Species, evolution of, influence of previous history on, A., III, 319.

Spectra, absorption, analysis of, A., I, 52.

band, optical activity and absorption in, A., I, 193. y bands in, C., 98.

interlaboratory comparison of, C., 141. of coloured compounds, A., I, 211. of metals of the iron group, A., I, 73.

of organic compounds in solution, effect of molecular environment on, A., I, 28.

ultra-violet, and activity of organic compounds, A., I, 116, 132, 211, 227. of colloidal solutions and precipitates,

A., I, 265; C., 200. vacuum, of organic compounds, A., I, 77; C., 97.

arc, intensity measurements in, C., 147. stabilisation of excitation of, C., 147.

atomic, oscillation intensities in, A., I, 113. Auger transitions and line widths in, A., I,

Balmer, derivation of, A., I, 185.

continuous, of hydrogen-like atoms, A., I, 49. standardisation of photographs of, A., I, 190.

Debye, coefficient of damping of waves of, A., I, 98.

emission, lamp as source of, C., 199.

excitation of, source of, C., 45. frequency, of crystals, A., I, 6.

impulse discharge, time scanning of, A., I, 262.

infra-red, application of, to molecular interaction, C., 97. molecular, A., I, 190.

near, vibration frequencies of molecular groups in, A., I, 211.

of hydrocarbons, A., I, 264.

of liquid aliphatic and aromatic hydrocarbons, A., I, 141.

technique of measurements with, A., I, 141. ultra-violet, and visible, constant-deviation prisms for, C., 199.

Spectra, intensity distribution in quartetdoublet bands of, A., I, 77.

luminescence, of crystals, A., I, 141. of electrolytic solutions, A., I, 116.

magnetic, in infra-low frequency, A., I, 80. molecular, analysis of, A., I, 140. intensity distribution in, A., I, 27.

of carotenoids, A., II, 9. phosphorescence and scintillation, A., I, 78. physics of, and thermodynamics, A., I, 27.

Raman, A., I, 97, 192, 267. and viscosity of liquids, A., I, 118. characteristic frequencies in, A., I, 117.

constitution and, A., I, 267. crystal structure and, A., I, 165.

depolarisation in, C., 45. depolarisation of lines in, A., I, 3, 267. effect of temperature on, A., I, 165.

hydrogen linkings and, A., I, 165. of amino-acids, A., I, 4.

of crystals, A., I, 213. of glass and glass-like materials, A., I,

β-ray, analysis of, A., I, 139. from 133 iodine, A., I, 114.

X-ray, absorption, effect of chemical bond on, A., I, 261.

continuous, A., I, 137. determination of h/e by, A., I, 261.

L-series, emission, A., I, 261. term values of, A., I, I37.

KX-ray, absorption and emission, structure and, A., I, 114.

Rayleigh lines in, effect of pressure on, A., I, 266.

structure of, A., I, 118. source unit for, C., 147.

spark, formation of, for spectrographic analysis of metals, C., 97.

Spectrochemistry in petroleum industry, C., 199. Spectrofluorescence, A., I, 164.

Spectrographs, grating, C., 45.

interferential width of slits of, C., 202. McGregor, McMath-Hulbert Observatory, C., 199.

mass, C., 199. multiple range, C., 199.

X-ray, C., 146. Spectrography, radiation, use of, in petroleum analysis, C., 115. works laboratory for, organisation of, C.,

99.

Spectrometer, infra-red, bolometer and galvanometer system for, C., 98. maps, C., 45.

and diffusion isotope separator, C., 97. ion sources for, C., 97. use of, in analysis, C., 45.

Spectrophotometer, infra-red, automatic highspeed, C., 99.

monochromator cams for, C., 45. sample holder for, (P.), C., 46.

Spectrophotometry, and the textile colorist, C., 73.

Spectroprojector, C., 98.

Spectroscope, use of, in steelworks, C., 66. Spectroscopic analysis. See under Analysis.

Spectroscopy, absorption, infra-red, industrial applications of, C., 45.

Speech, mechanism of, A., III, 727.

Speotyto cunicularia hypugæa, transmission of equine encephalomyelitis to, A., III, 374.

Sperm. See Seminal fluid. Spermaphagia, non-septic, in guinea-pig, A., III,

Spermatogenesis, atypical, relation between centriole and centromere in, of viviparid

snails, A., III, 237. effect on, of testosterone propionate, A., III,

maintenance of, in hypophysectomised rats with testosterone from intratesticular pellets, A., III, 342.

Spermatozoa, bull, survival of, A., III, 594. ejaculated, metabolism of, effect of electrolytes and pH on, A., III, 411. epididymal, disintegration of, by cooling, A., Spermatozoa, human, A., III, 411.

transportation of, by airplane, for artificial insemination, A., III, 191.

injection of, effect of, on sperm agglutinin titre in mice, A., III, 345.

X-irradiation of, in rabbits, A., III, 813.

metabolism and motility of, role of oxygen in, in man, A., III, 254.

number of, in bull semen, determination of. A., III, 656; C., 176.

physiology of, in mammals, A., III, 538. survival of, in female reproductive tract of bat A., III, 570.

Spheroproteins, conversion of, into linear proteins, by deamination, A., II, 383.

Sphincter of Oddi. See under Muscle. Sphincter pupillæ. See under Muscle.

Sphingomyelin, A., I, 15. from brain. See under Brain.

Sphygmomanometry, indirect, C., 194. Spiders, black widow. See Latrodectus.

Spina bifida, and its associated skull defects, A., III, 786.

anterior and posterior, combined, in neonatal

human, A., III, 446. Spinach, dehydrated, changes in colour and

pigments in, C., 33.

folic acid from, A., II, 244. leaves, chloroplast substance of, A., III, 784. Nobel, photoperiodic response of, A., III, 442. oxalate content of, in relation to soil-calcium, A., III, 154.

Spinal column, development of, in man, A., III,

Spinal cord, choline-esterase concentration in, effect of dorsal root section on, in cats, A., III, 400.

ependymal and glial cells of, growth and transformations of, A., III, 788.

freezing of, convulsions after, A., III, 581. inhibition in, A., III, 800.

lateral corticospinal tract in, section of, paresis after, in monkeys, A., III, 179. lumbosacral and thoracic, injuries to, A., III,

morphology of, in rabbits with reference to artifact production, A., III, 178.

nerve fibres of, silver stain for, A., III, 161. retrograde degeneration in, A., III, 643. section of, effect of, in frogs, A., III, 581.

on tissue permeability, A., III, 101. termination of, vertebral level of, A., III, 569.

transection of, due to birth injury, A., III,

Spinal fluid. See Cerebrospinal fluid.

a-Spinastenyl acetate, A., II, 20. a-Spinasterol, structure of, A., II, 20.

Spindle oil, Venezuelan, carcinogenic material in, concentration of, by distillation and absorption, A., III, 416.

Spinothalamic tract, in medulla, surgical division of, A., III, 801.

Spirillum minus, therapeutic action of penicillin against, A., III, 551.

Spirits, denatured, detection and determination in, of pyridine bases, C., 20.

Spirits of camphor, determination in, of camphor and ethyl alcohol, C., 137.

Spirochata gallinarum, cultures, effect of ascorbic

acid on, A., III, 614. Spirochæta hispanica, ultrafiltration of, A., III,

614. Spirochæta recurrentis, therapeutic action of penicillin against, in mice, A., III, 551.

Spirochætes, survival of, in frozen plasma, A., III, 70.

Spirometer, recording, C., 93.

Splanchnicectomy, in malignant hypertension, A., III, 799.

Spleen, abnormally mobile, rupture of, A., III,

xanthomatosis of, with " agnotogenic " splenomegaly and anemia, A., III, 166. cerebrosides of, in Gaucher's disease, A., III,

eosinophilia of. See under Eosinophilia. glucosidolipin of, A., III, 549.

Spleen, irradiation of, for control of puberal bleeding, A., III, 187.

reservoir function of, in domestic fowls, A.,

swine, unsaponifiable lipoids from, A., II, 104. Splenectomy, treatment with, of anemia, A., III, 166.

of Gaucher's disease, A., III, 240. Spondylitis, rheumatoid, A., III, 301.

Sponges, fresh-water, of Wisconsin, A., III, 117. Sporulation, synchronous, A., III, 770. Spotted fever. See Meningitis, cerebrospinal.

Sprays, agricultural, permeability of, to water vapour, C., 90.

Spruce trees, Norway, propagation of, A., III,

Sitka, cuttings of, rooting of, stimulated by growth substances, A., III, 156.

Sprue, hæmaturia and hæmoptysis in, A., III, 240.

serum-potassium in, A., III, 394. skin changes in, A., III, 46.

Sputum, coliform bacilli in, A., III, 845. Ziehl-Gram staining method for, A., III, 5. Squalene, detection of, in natural fats, A., III,

alus acanthias, auricle of, isolated, innervation of, action of acetylcholine, adrenaline, and potassium in relation to, Squalus A., III, 326.

embryonic nutrition in, A., III, 4. renal tubule of, structure of, A., III, 160. Squint, and its correction, A., III, 529.

fixating eye in, choice of, A., III, 802. orthoptics for, in infants, A., III, 333.

Squirrels, grounds, sylvatic plague in, in Central California, A., III, 304.

Stains, Best's carmine, for glycogen, A., III, 630. carbolluchsin and iodine vapour, for vaginal smears, A., III, 713. chlorazol-black E, for root-tip chromosomes,

A., III, 161.

elastica-trichrome, combined, for tissues, A., III, 237.

eosin-azure-methylene-blue, for blood and malaria parasite, A., III, 161.

Gram-Pappenheim, for films and sections, A., III. 390.

hæmalum-aurantia-aniline-blue,

hæmatoxylin-cosin, A., III, 522.

Mallory's phosphotungstic acid hæmatoxylin, for intestinal protozoa, A., III, 789. Pappenheim, stable, A., III, 521.

piero-Mallory, A., III, 390.

propylene glycol-water, leucocyte differentiation by, in counting chamber, A., III, 793. silver, for nerve fibres and endings, A., III, 161.

standardisation of, A., III, 93.

Staining, bacteriologic, use of tertiary butyl alcohol in, A., III, 238.

Gram-positive and Gram-negative organisms, in frozen and paraffin sections, A., III, 320.

of insect cuticle, dioxan in, A., III, 93. of tubercle bacilli in fluorescence microscopy,

A., III, 630. of vaginal smears, A., III, 93.

Romanowsky, buffered, of collodion-coated sections, A., III, 93.

spore-, Wirtz, technique of, A., III, 713. tissue, Romanowsky, acetone and methanol in, A., III, 161.

surface, A., III, 93.

Ziehl-Gram, for exudates, pus, and sputum, A., III, 5.

Stamens. See under Flowers. Stannous salts. See under Tin.

Stapes, human, development of, A., III, 532. Staphylococci, aminobenzoic acid formation by, A., III, 773.

antibacterial action of blood on, A., III, 618. antitoxins, treatment with, of staphylococcal infection, A., III, 204.

carriers of, A., III, 848.

casein digestion by, on milk agar, A., III, 149. coagulase production by, A., III, 698.

Staphylococci, coagulation by, tested with plasma or whole blood, A., III, 563. hæmolytic, food poisoning by, A., III, 848. infections with, treatment of, with sulphon-

amides, A., III, 680. pathogenic clumping of, in plasma, A., III,

149. isolation of, from fæces, A., III, 563.

resistance of, to inhibitory substances, A., III, 437.

to penicillin, A., III, 76.

to penicillin and to sodium sulphathiazole, A., III, 618.

to sulphonamides, A., III, 618.

sulphanilamide-resistant, pigment production by, A., III, 76.

toxicity of, from goat's milk, A., III, 149. toxin, effect on, of actinomycin, clavacin, and tyrothricin, A., III. 76.

toxoid, antihæmolysin level after treatment with, A., III, 563. detection of, A., III, 300.

Staphylococcus aureus, glucose fermentation by, in presence of niacin and thiamin, A., III,

growth factors for, A., III, 615.

growth and morphology of, effect of penicillin on, A., III, 618. infection by, effect on, of sulphapyrazine and

sulphapyrimidine in mice, A., III, 358. in nose and throat, A., III, 847.

treatment of, with staphylococcal antitoxin and sulphathiazole, A., III, 204.

nutrition of, effect of proflavine on, A., III, 773.

satellite zone" produced by, on solid media, phenomenon of, A., III, 209. sulplionamide-resistant, p-aminobenzoic acid synthesis of, A., III, 75.

Stars, dwarf, white, hydrogen content of, A., I,

irregular variable, absolute magnitudes and space motions, of, A., I, 49.

metals in, A., I, 207.

molecules in atmospheres of, A., I, 95. spectra of, A., I, 50, 161.

interstellar lines in, A., I, 50. BB + 14°3887, A., I, 51. CD - 27°11944, A., I, 51.

HD 190073, A., I, 49. HD 192954, A., I, 51.

structure of, A., I, 95. M-type variable, radial velocities and spectra of, A., I, 49.

Wolf-Rayet, spectra of, emission, A., I, 50. Starch, A., II, 8, 39, 325; III, 840.

amylolytic degradation of, A., II, 73.

components of, characterisation of, A., II,

end-group determination of, A., II, 39. configuration of, and its iodine complex, A., I. 5.

degradation products of, separation of, by

adsorption, C., 178. digestibility of, in cat family, and effect of freezing, A., III, 601.

digestion of, effect on, of oil from navv beans, A., III, 840.

end group content, viscosity, and osmotic pressure of, and its components, A., II, 93. hydration of, below gelatinisation temperature, A., I, 14.

hydrolysates of, water absorption by, C., 178.

iodine complex with, A., I, 99; II, 39. spectra of, absorption, and structure of starch and starch components, A., II,

limit dextrins and, A., II, 93; III, 67. maize, adsorption of fatty acids by, A., II, 327.

methylated, sugars obtained by fission of, A., II, 93.

molecules, types of, A., II, 39. oxidised, action of amylase on, A., III, 67. potato, determination in, of water, C., 128. structure of, A., I. 146; III, 444. suspensions, viscosity of, A., I, 60.

Starch, synthesis of, by enzymes, effect of acid hydrolysis on, A., III, 500.

by potato-phosphorylase, compared with dextran synthesis by leuconostoc enzyme, A., III, 432.

use of, in chromatography, C., 141.

Starch syrup, hydrolysed, refractive index-dry substance tables for, C., 128.

Starfish, sterols of, A., II, 340.

Stark effect, in dielectrics, A., I, 261. small, observation of, A., I, 93.

Starlings, sexual activation of, effect of coloured illumination on, A., III, 191.

Statistics in chemical methods, C., 142.

Status asthmaticus, with other allergies, A., III,

Staurolite, etching of, A., I, 70. Stearaldehyde, derivatives of, C., 117.

Stearic acid, aluminium salts, A., II, 3.

colloidal, sols, effect of electric field on, A., I,

constitution diagram of, A., I. 17.

glycidyl ester, A., II, 90.

potassium and sodium salts, electrical conductivity of, in presence of cresols, A., 1,

sodium salt, crystals, growth of, A., I, 243. physical state of, A., I, 32.

structure of, A., I, 30.

surface tension of, in mineral oil dispersions, A., I, 58.

wetting power of, in mineral oil systems, A., I, 58. N-Stearoyl-N-(or N'-)p-dimethylaminophenyl-

N'-(or N-)1-menthylcarbamide, A., II, 106. O-Stearylsalicylie acid, methyl ester, A., II, 166.

N¹-Stearylsulphanilamide, A., II. 365. Steel, adsorption on, of gases, A., I, 151.

alloy, analysis of, spectrographically, C., 66. determination in, of niobium, titanium, and zirconium, C., 9.

austenite grain number in, equation for, C., 15.

austenitic grain in, C., 15.

carbon, grain size in, for springs, C., 15.
stress-strain curves for, A., I, 241.
carbon and low-alloy, determination in, of

carbon from hardness measurements, C., 112.

carbon pressure in, C., 162.

decarburising action on, of barium chloride baths, C., 65.

depth of decarbonised layers in, C., 14.

drawn, hardness testing and structure of, C., 14.

high-speed, determination in, of molybdenum, C., 65.

low-carbon, determination in, of carbon, C., 156.

metallography of, C., 162.

mild, plastic flow in, stress due to, A., I,

mild cold-drawn, annealing of, testing of, C., 14.

molten, analysis of gases in, C., 65. determination in, of oxygen, C., 13.

non-metallic inclusions in, classification of, C., 14.

quantity of, magnetic detection of, (P.), C., 162.

quenched, austenite grains in, C., 15.

rust on, detection of, C., 65. silicon, analysis of, by vacuum fusion, C.,

sorting of, thermo-electric method for, C., 66.

stainless, determination in, of chromium and nickel, spectrographically, C., 67...

structural, painted, plumbism in workers on salvage of, A., III, 363. tempered, iron carbide crystals in, A., I, 5.

titanium, determination in, of non-metallic inclusions, C., 14. valve, physico-mechanical properties of, C.,

15. vanadium, determination in. of phosphorus, C., 63.

Steel analysis analysis of, C., 14, 65, 162. fabricated, spectrographic, C., 163. spectrographic, spark excitation for, C., 112. spectroscopic, C., 61, 65, 66. detection in, of aluminium, with aurintricarboxylic acid, C., 60. of manganese, C., 13. of vanadium, C., 159. determination in, of aluminium, C., 108. of carbon, by low-pressure combustion, C., 112. with carbometer, C., 8. of copper, electrolytically, C., 3, 105. of germanium, C., 157. of manganese, C., 13. of molybdenum, C., 12, 160. of nickel, C., 15, 163. of nitrogen, C., 13. of phosphorus, C., 10. of silicon, C., 66. of tungsten, C., 12. of vanadium, photo-electrically, C., 10. of various constituents, C., 14. Steel balls, magnetisation of, effect of iron deposits on, A., I, 257.

Steel plate, linings, thickness measurement of, C., 162. Steel sheets, detection of blisters in, by ultrasonic waves, C., 112. Steel works, use of spectroscopic analysis in, Steeloscope, calibration curves for, C., 45. of, in Kharkov electrical machine-building plant, C., 65. in Kirov plant, C., 66. in works practice, C., 65.

Steers, nutrition of, sova-bean meal and urea, A., III, 419. Stellastanol, and its derivatives, A., II, 341. β -Stellastenol, A., II, 341. α-Stellastenyl acetate, A., II, 341. Stereochemistry of co-ordination number eight, A., I, 98. Sterilisation, compulsory, A., III, 215. eugenic, medico-legal aspects of, A., III, 215. hand, evaluation of, A., III, 71. Sterility, A., III, 32. activity of a-tocopherol against, in rats on vitamin-E-poor diets, A., III, 202. diagnosis and treatment of, hystero-salpingography in, A., III, 32. due to bilateral polycystic ovaries, A., III, effect of thyroid on, in normal and hypothyroid women, A., III, 464. human, investigations in, A., III, 408. obstetric complications in relation to, A., III, of ovarian origin, A., III, 32. sympathectomy and, A., III, 582. See also Infertility. Steroids, A., II, 123, 264. adrenal cortex, antifibromatogenic antiestrogenic action of, A., III, 590. anæsthetic, absorption and detoxification of, A., III, 655. androgenic, effect of, on adrenal cortex of hypophysectomised rats, A., III, 731. antifibromatogenic, A., III, 481. action of, influence of chemical structure on, A., III, 590. structural characteristics of, A., III, 416. artificial, antifibromatogenic activity of, A.,

III, 662.

induced by, A., III, 109.

effect of, on tumour growth, A., III, 664. metabolism of. See under Metabolism.

Pettenkofer reaction with, A., II, 373.

dehydrocholate, A., III, 736.

overdosage with, morphological changes in fowls after, A., III, 253.

sex, overt and masked actions of, A., III,

sex hormones and. A., II, 52, 105, 106, 140, 229, 230, 259, 266, 282, 343.

solubility of, in aqueous solution of sodium

Steroids, 16-substituted, A., II, 165. urinary, C., 177. carbon, A., II, 20.
Steroid ketones. See Ketosteroids.
Sterols, A., II, 21, 301. hydrogenation of, A., II, 78. of lower marine animals, A., III, 35. Sterol group, A., II, 79, 80. anti-mitotics of, A., III, 92. in, A., II, 264. Stethography, feetal, A., III, 797. Stibnates. See under Antimony. C., 37. fate of, in body, A., III, 61. acetyl derivative, A., II, 20. △9(11):8(14):22(23)Stigmastatrien-7-one, △8(14)Stigmasten-7-one, 3-hydroxy-, derivative, A., II, 20. A., II, 277. III, 144. A., IÍ, 44. natural, A., II, 191. substituted, A., II, 189. II, 221. Stilbene-2-carboxylamide, 4-nitro-. 4:2'-dinitro-, A., II, 221. Stilbene-2-carboxylic aci acid, 4:2'-dinitro-, A., II, 221. oral A III, 409 pausal symptoms, and for suppression, A., III, 736. on adrenals in rats, A., III, 108. on lactation, A., III, 740. gonadotropins in 655. III, 469. development and repair of organ changes

Stiles-Crawford effect. See under Eyes, pupil of.

Stimulants, cardiac and respiratory, treatment

with, of anoxia, A., III, 722.

Stimulator, 'square-wave," for biology, C., 141. Stirrers, circulating, C., 207.
vacuum-operated, C., 207.
Stomach, acidity of, appetite, and nutritional hydration in relation to, A., III, 192. with ethylenic linkings between quaternary after operation, A., III, 814. cancer of, anæmia in, A., III, 322. and its early diagnosis, A., III, 40. progestational activity of, A., III, 111. requirement of, for insects, A., III, 352. sex hormones and, A., II, 196. and mucosal relief technique, A., III, 34. bacteriology of, in relation to complications after gastric surgery, A., III, 412. causation of, A., III, 351. classification of, A., III, 417. substances related to, synthesis of, A., II, 17, prognosis of, A., III, 351. contents of, peptic activity of, effect of sodium alkyl sulphate on, A., III, 346. Sterol series, chromatography and mesomerism digestive secretions of, in infancy and childhood, A., III, 192. Stethoscope, electrical amplifying, C., 194. dilatation of, acute, A., III, 192. emptying of, effect on, of body emotions and irritations, A., III, 191. Stibophen, determination in, of pyrocatechol, time of, effect of alcohol on, A., III, 60. epithelium of, in frogs during reparative Stichtite, Bon-Oufroh, Morocco, A., I, 134. 48(9):22(23)Stigmastadien-7-one, 3-hydr regeneration, A., III, 5. 3-hydroxy-, glands of. See Glands, gastric. hemorrhage of, traumatic, A., III, 34. hernia of, through right side of diaphragm, A., III, 317. 3-hydroxy-, acetyl derivative, A., II, 20. in relation to erythropoiesis, A., III, 6. acetyl leiomyoma malignum of, A., III, 417. lesions of, due to calcium deficiency in rats, A., III, 34. Stigmatisation, somatic, in childhood, A., III, Stilbamidine, treatment with, of infantile leishmaniasis, A., III, 556. lipomas of, submucous, A., III, 351. motility of, effect of binaural galvanic Stilbazole, µ-chloro-2-nitro-, and its derivatives, stimulation and swinging on, in dogs, A., III, 113. 2-nitro-, derivatives of, A., II, 277. Stilbene, derivatives, bactericidal action of, A., mucosa of, argentaffin cells of, in rats, A., III, 788. mucous smears of, metachromatic staining of, oxide, halogenohydrins from, A., II, 334. A., III, 573. Stilbene, 4'-amino-4'-cyano- and -4'-hydroxy-, resting, electrical energy output of, A., III, 539. Stilbenes, antibacterial action of, A., II, 44. secretion in, effect on, of F929 and F1571, in dogs, A., III, 656. of histamine, in rats, A., III, 345. synthesis of, reactions of o-substituents in, A. of histamine and insulin, A., III, 473. of sodium bicarbonate, A., III, 656. stimulation of, by neurine, A., III, 656. potency of liver extract in, A., III, 657. secretory function of, effect of parasitic worms 4-nitro-. and on, in dogs, A., III, 595. Stilbæstrol, administration of, hæmatocolpos tumours of, induction of, A., III, 349, 661. and hematometra after, A., III, 409. See also Gastric juice, etc. Stomatitis, due to vitamin deficiency, treatment clinical effects of, A., III, 31, 409. configuration of, A., III, 129. dimethyl ether, treatment with, of menoof, A., III, 266. of dietetic origin, urinary porphyrin excretion in, A., III, 200. ulcerative, associated with avitaminosis in Malta, A., III, 675. lactation vesicular, virus, infection by, of chick embryos, A., III, 152. effect of, in parturient women, A., III, 468. Stones, analysis of, microchemical, C., 16. on menopause, vaginal smear, and urinary Stopcocks, vacuum, lubricant for, C., 207. oophorectomised Strabismus. See Squint. women, A., III, 810. on puerperal breast engorgement, A., III, Strangulation, intestinal, effect of retrograde venous thrombosis in, A., III, 814. See also Hernia. Strength tester, boxboard, C., 56. on tumour growth, A., III, 664. environmental, effect of, in shortening gestation in lactating rat, A., III, 109. Strephosymbolia, visual functions, in, A., III, Streptohacillus moniliformis, arthritis due to, in chick embryo, A., III, 774. evaluation of, as therapeutic œstrogen, A., hair loss in male dogs fed, A., III, 343. bacteria from large bodies of, A., III, 76. inactivation of, in liver, in vitro, A., III, Streptococci, bacteriostatic action on, azochloroamide and sulphanilamide, A., III, 694. lactation suppression by, A., III, 469. carriers of, A., III, 848. cestrogenic potency of, in guinea-pig, A., III, culture media for, crystal-violet and sodium azide in, A., III, 144. priming action of, on human gravid uterus, A., III, 409. eye lesions due to, treatment of, A., III, treatment with, A., III, 190. 848. fermentation by, effect on of sodium of hypoplastic genitalia in women, A., III, azide, A., III, 694. growth of, as affected by pantothenates and pantoyltaurine, A., III, 506. of menopause, A., III, 409, 468. of prostatic cancer, A., III, 122, 667.

hæmolvsis by, in blood-agar plates, A., III,

in blood media, A., III, 373.

Streptococci, hæmolytic, glycolysis by, in presence of pantothenate and pantoyltaurine, A., III, 619.

group A, antigens of, and effect of proteolytic enzymes thereon, A., III, 372.

antigenic composition of, A., III, 509. infection by, of men, A., III, 774. type relationships of, A., III, 77. typing of, A., III, 77, 149. virulence of, C., 186.

role of hyaluronic acid in, A., III, 774. group C, variation of, A., III, 564. growth of, on raw milk, A., III, 300. hyaluronidase production by, A., III, 509. in dust of hospital wards, A., III, 699. infection by, effect on, of sulphapyrazine

and sulphapyrimidine in mice, A., III, 358.

transmitted by flies, A., III, 773. puerperal sepsis due to, A., III, 699. in fæces of patients with ulcerative colitis, A., III, 77.

in food, infection and poisoning by, A., III, 372.

infection by, control of, in measles wards, A., III, 695.

food-borne, A., III, 77.

in man, A., III, 150. isolation of, from mixed cultures, A., III,

848.

lactic fermentation by, A., III, 771. milk, antibacterial protein from, A., III, 615.

pathogenic, fermentation by, A., III, 619. resistance of, to penicillin, A., III, 76. toxin, joint pains caused by, A., III, 301. a-type, filterable infectious agent from, A., III, 699.

food-poisoning, growth of, in canned foods,

A., III, 619.

vaccine, effect of injection of, A., III, 224. injection of, antibody formation after, A., III, 223.

Streptococcus allantoicus, allantoin fermentation by, A., III, 76.

Streptococcus facalis, growth of, factor requirements for, A., III, 848.

Streptococcus lactis, grouping of, and its relation to Streptococcus facalis, A., III, 76. growth of, factor for, A., III, 76.

factor requirements for, A., III, 848. nutrition of, A., III, 147, 698, 844.

Streptococcus lactis R, use of, in folic acid determination, C., 93.

Streptococcus varians, carotenoids in spectra of, A., III, 76.

Streptococcus viridans, effect of sulpha drugs on, A., III, 699.

Streptomycin, antibiotic activity of, A., III, 502. Streptothricin, antibiotic action of, A., III, 368. microbiology of, A., III, 142.

production and activity of, A., III, 56. Stress-strain-time problem, C., 143. Stromatin, A., III, 450.

Strongylocentrotus franciscanus, hybrids, with Strongylocentrotus purpuratus, plutei of, parenteral inheritance in, A., III, 236.

Strontium, isotopes, from uranium disintegration, A., I, 139. radioactive, from uranium fission, A., I, 95.

spectrum of, Stark effect in, A., I, 73. Strontium compounds, biochemistry of, A., III, 261.

with magnesium, crystal structure of, A., I, 194.

Strontium azidocuprate, A., I, 182.

bromide, solubility of, in water, A., I, 35. carbonate, crystal structure of, and of its mixtures with calcium carbonate, A., I, 230.

chloride, hexahydrate, crystal structure of, A., I, 5.

solubility of, in water, A., I, 35. of, equilibrium bismuth with sesquioxide, A., I, 37.
orthosilicate, solid solutions of, with calcium

orthosilicate, A., I, 276.

Strontium detection and determination :detection of, C., 6.

determination of, in rocks, spectroscopically, C., 107.

Strophanthidin benzoate, butyrate, and propionate, physiological action of, A., III, 134. Structure, chemical, investigations of, A., II, 213, 280, 325, 382.

leptonic, contributions to, of undifferentiated protoplasms, A., III, 573. Struma ovarii. Sec under Ovaries.

Strychnine, convulsions from, action of carbon dioxide on, A., III, 180.

determination of, in syrup glycerophosph., C., 185. effect of, on absorption of sugars from

guinea-pig intestine, A., III, 192. toxicity of, A., III, 685.

apoStrychnine, A., II, 241.
sec.-\(\psi\)-Strychnine, N-acetyl derivatives of, and their oxidation, A., II, 174.

Strychnos alkaloids, A., II, 64, 174, 239, 240. Styracitol, oxidation of, with lead tetra-acetate in glacial acetic acid, A., II, 7.

structure of, A., II, 210. Styrene, heat polymerisation of, delay of, by

benzoquinone, A., II, 188. optically active derivative of, and its polymer, A., II, 218.

physical constants of, A., I, 31 polymerisation of, A., I, 107, 157.

in presence of nitrothiophen and chloranil, Ā., II, 123.

induced by peroxide, A., I, 227. inhibition of, A., I, 66.

Styrene, o-chloro-, 3:4- and 3:5-dichloro-, and p-fluoro-, A., II, 363. m-chloro-, A., II, 123.

of, p-chloro-, co-polymers and methyl methacrylate, A., II, 123.

nitro-, β -dimethylamino-derivatives of, A., II, 293.

Styrenes, substituted, addition to, of maleic anhydrides, A., II, 78. preparation of, A., II, 363.

4-Styrylbenzophenone, 3:3'-dinitro-, A., II, 224. 5-Styryl-3-methylisooxazole, 2-amino-, and its

derivatives, A., II, 238. 4-chloro-, and its dibromide, A., II, 238.

4-nitro-, and its dibromide, A., II, 237. dimeride of, A., II, 238.

4-nitro-5-m- and -5-p-nitro-, A., II, 238. Subarachnoid space, saline solution absorption from, effect of anoxia on, in dogs, A., III, 460. Succindianilide, aa'-dibromo-NN'-dinitroso-, A.,

II, 120. Succindi-p-bromoanilide, NN'-dinitroso-, A., II, 120.

Succindi-p-chloroanilide, NN'-dinitroso-, A., II, 120.

Succindi-\(\beta\)-naphthalide, \(NN'\)-dinitroso-, \(A.\), \(II\), 120.

Succinic acid, diethyl ester, condensation of, with 2-acetylnaphthalene, A., II, 337.

salts, oxidative response of normal and neoplastic tissues to, A., III, 748. barbiturate

sodium salt, effect of, in anæsthesia, A., III, 682, 760. sulphonated, action of, on respiratory

metabolism of frog tissue, A., III, 604. Succinic anhydride, c chrysene, A., II, 298. condensation of, with

Succinic dehydrogenase. See under Dehydrogenase.

Succinoxidase. See under Oxidase. 2:3-Succinylperylene, A., II, 104.

Succinylsulphapyrazine, effect of, on intestinal coliform flora of mice, A., III, 277.

Succinylsulphathiazole, effect of, and caecetomy, on rats fed vitamin-K-free diet, A., III,

on vitamin-K synthesis in rat intestines, A., III, 425. inhibition of coprosterol formation by, A., III,

treatment with, agranulocytosis after, A., III,

of dysentery, A., III, 207.

Sucrose, octa(? hepta)-p-benzeneazobenzoate, A., II, 6.

conversion of, into starch in plant cells, A., III, 379.

crystals, growth of, A., I, 30.

determination of, by double polarisation, table for use with, C., 79.

determination and occurrence of, in tobacco,

inversion of, by ultrasonic waves, A., I, 88. phosphorolysis of, A., III, 288.

polysaccharide formation from, A., III, 500. sweetness of, in relation to glucose and fructose, A., III, 464.

synthetic, enzymic synthesis of, A., II, 361. Sugar, detection of, in boiler-feed water, apparatus for, C., 57.

determination of, with a-naphthol, C., 79. invert-, determination of, in refined sugars, C., 31.

in white sugar, C., 178. refined, determination in, of invert-sugar,

C., 31.

white, determination in, of invert-sugar, C., 178.

Sugars, absorption of, from intestines, effect of alkaloids on, A., III, 192.

acyclic derivatives of, action of diazomethane on, A., II, 6, 214.

adsorption of, by activated carbon from solutions, A., I, 277. azoyl derivatives of, separation of,

chromatographic adsorption, A., II, 6. compound, structures of, comparison of, A., II, 152.

determination of, biochemically, C., 79. in apple tissues, C., 31.

equilibrium of, with trioses, A., II, 361.

methanesulphonates of, A., II, 92.
methylated, separation of, by chromatographic adsorption of their azobenzene-4carboxylates, A., II, 152.

oxidation of, by lead tetra-acetate, A., II, 7, 210, 214, 327.

by pneumococci, inhibition of, A., III, 75. phenylosazones of, action of copper sulphate on, A., II, 292; C., 167. reducing, determination of, C., 79.

in brewing materials, C., 178. spectrofluorescence of, A., I, 164. sweetness of, A., III, 806.

Sugar acids, reducing, formation of, by acetic bacteria, A., III, 435.

Sugar alcohols, A., III, 52.

Sugar cane, leaves, photosynthesis of, A., III, 380.

Sulphacetamide, activity of, effect of salts on, A., III, 679.

Sulphacetimide, sodium derivative, penetration of, into skin, A., III, 277. Sulphadiazine. See Sulphapyrimidine.

Sulphaguanidine, action of, on avian coccidia, A., III, 277.

on Salmonella choleræsius infections in pigs, A., III, 358.

detection of, C., 135. prevention with, of dysentery, A., III, 207. treatment with, of dysentery, A., III, 207, 757.

in Australian general hospital, A., III,

of paratyphoid carriers, A., III, 55.

of typhoid carrier, A., III, 829. Sulphamerazine, A., III, 830.

absorption, exerction, solubility, and toxicity of, compared with sulphapyrimidine, A., III, 756.

activity of, in production of anæmia in mice, A., III, 830.

chemotherapeutic activity of, compared with sulphapyrimidine, A., III, 756.

effect of, and sulphapyrazine, on rabbit kidney compared with sulphapyrimidine and sulphathiazole, A., III, 829.

on toxins of agents of lymphogranulomapsittacosis group, A., III, 551. solubility of, and its N⁴-acetyl derivative at

different pH levels, A., III, 132.

Sulphamerazine, treatment with, of meningitis, A., III, 132.

of pneumonia, A., III, 132.

pemphigus-like reaction after, A., III, 829. Sulphamethyl diazine. See Sulphamerazine. Sulphamezathine, A., III, 131.

absorption, excretion, solubility, and toxicity of, compared with sulphapyrimidine, A., III, 756.

chemotherapeutic activity of, compared with

sulphapyrimidine, A., III, 756.
solubility of, and its N⁴-acetyl derivative,
compared with sulphapyrimidine and sulphamerazine, A., III, 132.

treatment with, A., III, 680.

of pneumonia, A., III, 54, 828.
Sulphamic acid, viscosity of, in aqueous solutions, and of its salts, A., I, 243.

Sulphamic acids, N-substituted, preparation and properties of, A., II, 158.

Sulphamide, derivatives, preparation, properties of, A., II, 364.

Sulphamide-amidines, A., II, 370.

4-p''-Sulphamylanilo-5-keto-2-phenyl-1-p'sulphamylphenylpyrrolidine, A., II, 235.

p-Sulphamylbenzamidine, and its derivatives, A., II, 370.

p-Sulphamylbenzeneazo-α-naphthol, A., II, 368. p-Sulphamylbenzeneazo-3-phenanthrol, A., II,

p-Sulphamylbenzeneazophloroglucinol, A., II, 368.

p-Sulphamylbenzeneazoresorcinol, A., II, 368. p-Sulphamylbenzeneazothymol, A., II, 368.

6-Sulphamyl-2-phenylquinoline-3-carboxylic acid, and its sodium salt, A., II, 235.

Sulphanilamide, absorption of, from burned surfaces, A., III, 55.

from gastrointestinal tract and pleural and peritoneal cavities in dogs, A., III, 551. from rectum and vagina, A., III, 829.

acctylation of, effect on, of chemicals and vitamin deficiency, A., III. 427.

administration of, histopathological changes in rats after, A., III, 607.

adsorption of, A., III, 204.

bactericidal action of, inhibition of, by local anæsthetics, A., III, 615.

bactericidal and bacteriostatic action of, A.,

bacteriostatic activity of, A., III, 694.

blood level of, after powder administration, A., III, 358.

compounds resembling, relation of structure to activity of, A., III, 828.

structure and physiological disposition of, A., III, 276.

copper complexes of, A., II, 365.

crystalline, implantation of, about gastrointestinal anastomoses in dogs, A., III, 55. derivatives of, A., II, 274, 380.

bacteriostatic activity and structure of, A., III, 294.

chemical structure and distribution of, A., III, 492.

detection of, C., 135.

and differentiation from its derivatives, C., 184.

determination of, in mixtures with sulphathiazole, speetrophotometrically, C., 86. dissociation constant and isoelectric point of, A., I, 249.

effect of, on plant growth, A., III, 382. on seed germination, A., III, 515.

with p-aminobenzoate, on growth of microorganisms, A., III, 506.

excretion of, in human bile, A., III, 53,

implantation of, in wounds, for reduction of post-operative infections, A., III, 492. in surgical infections, and its derivatives, A., III, 428.

inhibition by, of enzyme action, A., III, 285. intra-abdominal application of, in acute appendicitis, A., III, 255.

lozenge form, prevention and treatment with, of influenza and tonsillitis, A., III, 55.

mixtures of, with hæmostatic globulin, preparation and properties of, A., III, 133.

Sulphanilamide, oxidation products of, A., I, 130.

pharmacology of, and its derivatives, A., III,

physiological action of, and its interaction with p-aminobenzoic acid, A., III, 53. specificity of, A., III, 606.

pneumococcal resistance of, bacteriological and clinical investigations on, A., III, 206.

powder, application of, in radiotherapy, A.,

prevention with, of rheumatic fever in children, A., III, 757. spectrum of, absorption, ultra-violet, A., I,

therapy in medicine with, and its derivatives,

A., III, 204.

toxic doses of, dosage-mortality ratio of pentothal sodium after, A., III, 830. toxicity of, effect of liver extracts on, A., III,

treatment with, and its derivatives, blood changes during, A., III, 167.

of pneumonia, A., III, 205.

and sulphathiazole, of wounds, A., III, 428.

hepatic damage associated with, in infants and children, A., III, 830.

of Clostridium welchii infection, A., III, 205, 829.

of glomerulonephritis, A., III, 56. of meningitis in infants, A., III, 53.

of rheumatic heart disease in children, A., III. 53.

of salpingitis, A., III, 132.

Sulphanilamide, p-hydroxy-, bactericidal and bacteriostatic action of, A., III, 694.

Sulphanilamides, activity and structure of, A., III, 694.

application of, in laryngectomy, A., III, 651.

determination of, C., 135.

by furfuraldehyde-acetic acid reaction, C., 168.

effect of, on cerebral and neuromuscular actions in rats, A., III, 56.

exerction of, in breast milk, A., III, 53. medicinal, A., III, 491.

 N^1 -substituted, synthesis of, A., II, 25.

use of, in otorhinolaryngology, A., III, 184. ω-Sulphanilamidoacetophenone, hydrochloride, and its N⁴-acetyl derivative, A., II, 25.

p-Sulphanilamidobenzoic acid, p-3':5'-diiodo-, A., II, 11.

p-Sulphanilamido-a\beta-diethylstilbene, and its N⁴-acetyl derivative, A., II, 44.

Sulphanilamidoindazoles, and their N4-acetvl derivatives, A., II, 83. preparation of, A., II, 83.

2-Sulphanilamido-4-methylpyrimidine. See Sulphamerazine!

5-Sulphanilamidotetrazole, A., II, 380. δ -2-Sulphanilamido-4-thiazyl-n-butyric hydrochloride, A., II, 313.

y-2-Sulphanilamido-4-thiazylpropionic acid, and its hydrochloride, A., II, 313.

Sulphanilic acid, diazotised, coupling of, with 1:4-naphthylannnosulphonic acid, colorimetry of, A., I, 207.

thallium diphenyl ester, A., II, 66. 2-Sulphanilimido-3-methyl-2:3-dihydro-

thiazole, N⁴-N-acyl derivatives, A., II, 26. 2-Sulphanilimido-1-p-nitrobenzyl-1:2-dihydropyridine, and its N4-acyl derivatives, A., II,

2-Sulphanilimido-3-p-nitrobenzyl-2:3-dihydro-thiazoline, A., II, 26.

2-Sulphanilimido-3-m-nitrophenacyl-2:3dihydrothiazoline, and its N4-acyl derivatives, A., II, 26.

N1-Sulphanilylallylisothiocarbamide, and its acetyl derivative, A., II, 365. and its

4-Sulphanilylamidophenoxthionin. N⁴-acetyl derivative, A., II, 55. N^1 -Sulphanilylbutylisothiocarbamide, and its

acetyl derivative, A., II, 365. N1-Sulphanilylethylisothiocarbamide, acetyl derivative of, A., II, 365.

Sulphanilylglycine, 3:5-dviodo-, A., II, 11. 1-Sulphanilylindole, and its N4-acetyl deriv-

ative, A., II, 25. 1-Sulphanilylpropylesothiocarbamide, and its

acetyl derivative, A., II, 365. Sulphanilylsulphanilic acid, pharmacology of, A., III, 358. sodium salt,

N¹-Sulphanilylisothiocarbamides, A., II, 365. Sulphapyrazine, effect of, and sulphamerazine,

on rabbit kidney, compared with sulphapyrimidine and sulphathiazole, A., III, 829. on mice infected with hamolytic strepto-

coccus, pneumococcus, and Staphylococcus aureus, A., III, 358.

therapeutic efficacy and toxicity of, A., III, 492

treatment with, of infantile diarrhoa, A., III, 55.

of pneumonia, A., III, 205.

use of, in infants and children, A., III, 277. Sulphapyridine, activity of, in production of anæmia in mice, A., III, 830.

excretion of, in human bile, A., III, 53.

metabolic products of, in dogs, excretion of, A., II, 347.

metabolism of. See under Metabolism. prevention with, of cerebrospinal meningitis,

A., III, 680. of post-operative pneumonia, A., III, 428.

second course of, drug-fever accompanying, A., III, 551.

solution, treatment with, in otolaryngology, A., III, 805.

treatment with, of C infection, A., III, 205. of Clostridium welchii

of dysentery, A., III, 358. of malignant leukopenia, A., III, 204.

of meningitis, A., III, 828.

of typhoid fever, A., III, 277. Sulphapyridine, hydroxy-, and its glucuronide, brucine and silver salts, A., II, 347.

Sulphapyrimidine, activity of, in production of

anæmia in mice, A., III, 830. anæmia due to, A., III, 758.

calcium salts, and their subcutaneous administration, A., III, 54. detection of, C., 135, 184.

effect of, on mice infected with hemolytic

streptococcus, pneumococcus, and Staphylococcus aureus, A., III, 358. poisoning by. See under Poisoning.

prophylactic use of, against meningococcal infections, A., III, 299. renal complications from, alkalis and, A., III,

758.renal precipitation of, prevention of, in dogs,

A., III, 278. second course of, drug-fever accompanying, A., III, 551.

skin penetration of, A., III, 277. solubility of, and its N^4 -acetyl derivatives, compared with sulphamerazine and sulphamethazine, A., III, 132. toxicity of, A., III, 493.

compared with sulphathiazole in children, A., III, 493.

in growing cats, A., III, 209.

treatment with, alkali administration in, A., III, 829.

and antipneumococcal serum, of pneumonia, A., III, 54.

and its sodium compound, of meningitis and meningococcæmia, A., III, 757.

dermatitis after, A., III, 209. of actinomycosis, A., III, 829.

of agranulocytosis, A., III, 167. of Clostridium welchii infection, A., III, 205,

of endocarditis, A., III, 204.

of Gradenigo syndrome complicated with meningitis, A., III, 249.

of infantile diarrhea, A., III, 55.

of meningococcal infections, A., III, 493, 828.

of meningococci carriers, A., III, 828. of pneumonia, A., III, 757. effect of, on plasma-lipins, A., III, 679. Sulphapyrimidine, treatment with, of respiratory tract infections, A., III, 205, 828. of scarlet fever epidemic, A., III, 206. of septicæmia, A., III, 679. prevention of renal obstruction in, A., III, thrombocytopenic purpura after, A., III, 208. urinary excretion of, A., III, 278. Sulphates. See under Sulphur. Sulphate nitrophoska, A., 1, 86. Sulphathiazole, administration of, brain and kidney injury after, A., III, 55. adsorption of, A., III, 204. and its derivatives, synthesis of, A., II, 279. bacteriostatic action of, A., III, 144. calcium salts, and their subcutaneous administration, A., III, 54. chemotherapeutic action of, A., III, 679. copper complexes of, A., II, 365. cutaneous hypersensitivity to, A., III, 133. cutaneous penetration of, A., III, 277. cutaneous sensitisation to, A., III, 133, 830. dermatitis from. See under Dermatitis. detection of, C., 135. determination of, in mixtures with sulphanilamide, spectrophotometrically, C., 86. effect of, on surface bacteria of newborn compared with ammoniated infant. mercury, soap, and water, A., III, 132. gauze containing, in wound treatment, A., III, in glycerin, A., III, 493. microcrystalline, treatment with, of impetigo contagiosa, A., III, 133. prevention by, of gonococcic conjunctivitis, A., III, 828. of gonorrhea, A., III, 206. of post-operative cystitis, A., III, 55. second course of, drug-fever accompanying. A., III, 551. sodium derivative, toxicity of, for mice, A., III, 835. supersaturated solution of, for local application, A., III, 359. suspensions of, with paredrine, sensitivity to, A., III, 57. toxicity of, A., III, 208. synergistic action of, with guanidine thiourea, and urea, A., III, 436. with urea, A., III, 436. toxicity of, compared with sulphapyrimidine in children, A., III, 493. treatment with, and sulphanilamide, of wounds, A., III, 428. of appendicitis, A., III, 54, 277. in children, A., III, 208. of Clostridium welchii infection, A., III, 205, of coryza in chickens, A., III, 358. of endocarditis, A., III, 204. of gonorrhæa, A., III, 207. of jaundice, A., III, 679. of otitis media, A., III, 54. of pneumonia, A., III, 428. of pyuria in newborn, A., III, 206. of salpingitis, A., III, 132. of staphylococcal infection, A., III, 204. of typhoid fever, A., III, 207. rash and fever from, A., III, 208. thrombocytopenic purpura after, A., III, 208.use of, in dental surgery, A., III, 207. Sulphathiazole deoxyephedrine, sodium salt, treatment with, of keratoconjunctivitis, A., III. 181. Sulphides, colloidal, sols, structure of, A., I, 223. organic, reactions of, with organic sulphates, A., II, 2.

Sulphido-a\beta-dipropionic acid, diethyl ester, A.,

diethyl

acid.

Sulphido-β-α-methoxypropionic-α-ε-methoxyhexoic acid, dimethyl ester, A., II, 168.

Sulphido- β -propionic- α -glutaric acid, ester, A., II, 168.

Sulphido-β-propionic-α-ε-methoxyhexoic diethyl ester, A., II, 168.

Sulphites. See under Sulphur.

II, 168.

3-5'-Sulphobenzamido-5-sulphobenzoic 3-3'-amino-, and 3-3'-nitro-, and their salts, A., II, 337. 2-4'-Sulphobenzeneazo-1-naphthol-4-sulphonic acid, 2-2':6'-diodo-, disodium salt, A., II, 331. 2-4'-Sulphobenzeneazo-1-naphthylamine-4:8disulphonic acid, 2-2':6'-diiodo-, trisodium salt, A., II, 331. 2-4'-Sulphobenzeneazo-1-naphthylamine-4sulphonic acid, 2-2':6'-driodo-, disodium salt, A., 11, 331. 5-Sulphobenzoic acid, 3-amino-, autocondensations of, and its salts, A., II, 337.
3-nitro-, salts of, A., II, 337. Sulphocarboxylic acids, A., 11, 337. y-Sulpho-aβ-dimethyl-n-butyric acid, and its derivatives, A., II, 182. β-Sulphohexoic acid, m-toluidine salt, A., II, Sulphonamides, acidity and activity of, A., III, action of, A., III, 209, 551. against pncumococci in bone marrow cultures, A., III, 492. against Treponema recurrentis, A., III, compared with arsenicals, A., III, 132. effect of access to free oxygen on, A., III, in body, A., III, 276. on blood, A., III, 790. on blood-platelets, A., III, 208. on cellular respiration, A., III, 204. on co-enzyme I-linked enzyme systems, A., III, 492. on Corynebacterium diphtheriæ, A., III, 133. on nicotinamide-stimulated metabolism. A., III, 55. on phagocytosis, A., III, 427. action of proteins and guinea-pig organs on A., III, 757. action, pharmacology, and toxicity of, A., III, activity of, against Klebsiella pneumoniæ, infections, A., III, 205. allergy to, A., III, 758. antagonists, dynamists, and synergists of, A., III, 276. bactericidal action of, A., III, 427, 505. bacteriostatic activity of, A., III, 843. mixed with urea, A., III, 145. bibliography of, A., III, 204. binding of, by plasma-proteins, in determination of drug distribution in body, A., 111, 277. in plasma, A., III, 492. chemotherapeutic action of, A., III, 276. choice of, assessed from growth, A., III, cutaneous hypersensitivity to, A., III, 56. cutaneous reactions to, A., III, 680. death from, A., III, 55. demonstrating presence of, in tissues, histology of, A., III, 203. detection of, with xanthhydrol, A., II, 156; C., 86. determination of, C., 35, 85. in biological material, C., 136. in blood, C., 27, 77. in serum, C., 77. with electrophotometer, C., 184. diet containing, intestinal flora in rats on, A., III, 55. dosage and tolerance of, in advanced age, A., III, 204. excretion products of, butanol- and water-

hæmagglutinins and, A., III, 830.

hypersensitivity to, test for, A., III. 607.

effects of, in rabbits, A., III, 277.

Sulphonamides, inhalation of, A., III, 755.
inhibitor for, produced by bacteria on
sulphonamide agar, A., III, 560.
inhibitory effect of, on action of nicotine on acid, intestines, A., III, 756. iodinated derivatives of, A., II, 11. nomenclature and survey of, in therapeutic use, A., III, 204. ointments of, bacterial contamination in, A., III, 207. polarography of, A., 1, 130. protection with, against influenza virus, A., III, 829. renal damage due to, A., III, 830. resistance to, of pneumococci, A., III, 844. sodium salts, given by hypodermoclysis, A., III, 54. oral use of, A., III, 204. spectrophotometry of, C., 135. N⁴-substituted, A., II, 277. toxicity of, A., III, 278. in eyes, A., III, 23. treatment with, A., III, 204. in dermatology, A., III, 208, 829. in malaria, A., III, 54. in nasal and sinus infection, A., III, 359. membranous pyelitis after, A., III, 208. of actinomycosis of tongue, A., III, 54. of chancroidal infections, A., III, 54. of childhood infections, A., III, 53. of Clostridium welchii infection, A., III, 53. of dysentery, A., III, 358, 680. of ear infections, dangers of, A., III, 651. of gas gangrene, A., III, 428. of gonorrhoa, A., III, 607. resistance to, A., III, 607. of intestinal infections, A., III, 55. of Kaposi's varicelliform eruptions, A., III, 132 of leukæmia, A., III, 167. of liver damage, A., III, 204. of meningitis, A., III, 206, 493. of meningoeoccal infections, A., III, 757, of mine native labourers, A., III, 680. of ophthalmia neonatorum, A., III, 725. of osteomyelitis, A., III, 428, 680. of peritonitis, A., III, 207. of pneumonia, A., III, 54. of pulmonary actinomycosis with fistula, A., III, 54. of staphylococcal infections, A., III, 680. of tonsillitis and complications, A, III, of urinary tract infections, A., III, 206. of wounds, A., III, 55, 359, 492, 758. analogous serum-sickness and drug reactions in, A., III, 557. toxic reactions after, A., III. 208. use of suppository in, A., III. 133. use of, in gynæcology and obstetrics, A., III, in pædiatrics, A., III, 206. vitamin-II and, A., III, 126. p-Sulphonamidophenylarsonic acid, and its derivatives, toxicity and trypanocidal activity of, A., III, 835. 2-p-Sulphonamidophenyl-1-methyltetrahydroindazolone, A., II. 60. Sulphonation, aromatic, kinetics of, A., I, 286. Sulphonic acids, aromatic, as reagents for peptides, A., II, 356. Sulphonium compounds, A., II, 2. 4-p-Sulphophenylcamphor, and its barium and lead salts, A., II, 107. 1-4-o-Sulpho-p-toluidinoanthraquinone, mination of, in D and C colours, C., 7. soluble, and their rôle in urolithiasis, A., Sulphur, action of, on heterocyclic compounds, A., II, 235, 239. feeding with, effect of, on basal metabolism, pituitary, and thyroid, A., III, 587. for bacterial growth suppression in stored blood, A., III, 391. affinity of, for metals, A., I, 111. chemistry of, A., I, 52. colloidal, ionic exchange in, A., I, 13, 59. sols, structure and reactions of, A., I, 223. dust, physiology of workers with. A., III, in dentistry, A., III, 551.
in mixtures with proflavine, histological

in petrolatum, treatment with, in dermatoses,

A., III, 681.

318 INDEX OF SUBJECTS. Sulphur, isotopes, radioactive, activity of, in barium sulphate, A., I, 51.

molten and paste, determination in, of arsenic, C., 10. Sulphur cyanate, A., I, 111. thiocyanate, A., I, 111. plastic, A., I, 68. reaction of, with silver oxide, A., I, 255. recovery of, from gases containing hydrogen sulphide, A., I, 111. structure of, from electron diffraction, A., I, Sulphur determination 217.of bitumen, C., 17. of selenium, C., 160. valency of, A., I, 98. Sulphur compounds, oxidation of, with iodine in alkaline solutions, C., 64. Sulphur monochloride, reaction of, N-phenyl-N-methylthiocarbamide, A., II, for, C., 197. in pig iron, C., 11. 352. in producer gas, C., 11. in pyrites, C., 8, 11. in rubber, C., 26. nitride, structure of, from electron diffraction, A., I, 217. monoxide, A., I, 90. decomposition of, A., I, 68. explosion oxidation of, A., I, 40. thiol-, dioxide, additive compounds of, A., I, 16. products, C., 20. with amines, molecular surface energy of, A., I, 119. chlorination of hydrocarbons by mixtures of, with chlorine, A., I, 206. dangerous concentration of, signalling of, Sumaresinolic acid, A., II, 108. C., 46. determination of, in dehydrated foods, C., 132. in gelatin, C., 75. dispersion and refraction of, A., I, 237. equilibrium of, with acetic acid, A., I, 225. liquid, reactions in, A., I, 182. oxidation of, on vanadium catalysts, A., I, 254.reaction of, with hydrogen sulphide, A., I, 19. with hydrogen sulphide catalysed by silver sulphide, A., I, 227. A., III, 377. with elefines, A., I, 108. respiration of, A., III, 376. solubility of, in sodium solutions, A., I, 244. spectrum of, Raman, A., I, 192. phosphate trioxide, complex of, with nitrogen pentoxide, A., I, 231. III, 272. sulphonation of aromatic compounds by, See also Light. A., 1, 286. oxides, A., I, 292. Sulphuric acid, analysis of, in mixtures with to, A., I, 242. nitric acid, conductometrically, C., 64. coloration of, by organic compounds in sea-water, A., I, 257. magnetic moment of, A., I, 7. 10%, determination in, of potassium perchlorate, C., 3. dissociation of, in presence of hydrogen and III, 33. sulphate ions, A., I, 249. 33. fuming, heat of formation of, A., I, 250. production of, by contact process, determin-A., I, 47. ation of arsenic in gases from, C., 11. spectrum of. Raman, and structure, A., I, 117. synthesis of, vanadium catalysts in, A., I, 254. solid. See under Solids. Sulphates, determination of, C., 12, 39. Surface activity, A., I, 171. by filtration titration, C., 64. in medicinal mud, soil extracts, and water, C., 2, 39. C., 208. of porous materials, A., I, 124. in mixed cations, C., 159. in mud, soil, and water, A., I, 69. sublimation, A., I, 278. in presence of chromate, C., 12. in sewage, C., 89. relation of, to phosphates and silicates, A., I. 54. Sulphurous acid, detection of, C., 22. reaction of, with polythionic acids, A., I, 23 I, 166; C., 143. Sulphites, amphoteric properties of, in liquid sulphur dioxide, A., I, 182. determination of, iodometrically, C., 63. Thiosulphuric acid, reactions of, polythionic acids, A., I, 23.

Dithionates, structure and symmetry of, from molecular spectra, A., I, 191.

Tetrathionates, in bacteriological media, A.,

Pentathionic acid in water from Copahue, A.,

III, 71,

I, 134.

Polythionic acids, A., I, 23.

Sulphur organic compounds, A., II, 220. alicyclic, A., II, 335. effect of, on liver-lipins in rats, A., III, 742. Sulphates, organic, excretion of, after adrenaline administration, A., III, 407. reaction of, with organic sulphides, C., 19. determination in, of arsenic, C., 10. determination of, in brass and bronze, C., 160. in combustible gases or liquids, apparatus in sulphide concentrates, C., 64. determination of, in petroleum Sulphur ores, Rotokaua, Taupo, A., I, 47. Sulphuric acid. See under Sulphur. Sulphurous acid. See under Sulphur. Sulphuryl chloride, chlorination of hydro-carbons by, A., I, 206. Sun, atmosphere of, phosphorus in, A., I, 134. eclipse of, blindness due to, A., III, 183. rays from, intensity of, in Arctic, A., I, 28. spectrum of, ω_t and bands in, A., I, 52. spectrum of, ω_1 and bands in, A., coronal wave-lengths in, A., I, 49. Sunflower plants, growth of, in sulphur-deficient solution, A., III, 228. leaves, absorption by, of radioactive carbon dioxide, A., III, 313.
photosynthesis in, A., III, 441.
Sunflower seed, equilibrium hygroscopicity of, Sunlight, cure and prevention of rickets and calcium and phosphorus metabolism maintenance by, in Oklahoma, A., III, 272. effect of, on antirachitic potency of butter, A., Superconduction, theory of, A., I, 197. Superconductivity, transition from conductivity Superconductors, diamagnetism of, A., I, 147. intermediate state of, A., I, 168. Superfecundation, induction of, in rabbits, A., Superovulation, induction of, in rabbits, A., III, Superphosphates, reactions of, with serpentine, Surfaces, fresh, properties of, C., 43. freshly-formed, A., I, 277. roughness of, instruments for determination of, (P.), C., 104, 208. Surface area, measurement of, apparatus for, Surface energy, calculation of, from heat of heat of vaporisation and, A., I, 12. Surface tension, boundary, measurement of, by hanging-drop method, A., I, 245; C., 197. concentration and, of solutions, A., I, 171. measurement of, by sessile drop method, A., by vibrating jet method, C., 43. of liquids, measurement of, C., 196. of nematic liquids, A., I, 214. of solutions, A., I, 278. temperature variation of, A., I, 166. van der Waals' equation and, A., I, 222. Surgery, gastrointestinal clamp for anastomosis in, A., III, 742. infections in, treatment with, of penicillin, A., III, 827. pain and, A., III, 20. physics and, A., III, 258.

Surgery, problems of, in forward areas, A., III, 660 recording of data of, in military service, with Hollerith punch cards, A., III, 429. restitution and adaptation mechanisms in, A., III, 38. war, four years of, A., III, 660. Sutures, catgut, effect of sensitivity to, on wound healing, A., III, 818. catgut and collagen for, A., III, 349. catgut, silk, and steel wire, comparison of, C., 43. for bone, living and preserved, fascia for, A., for nerves, plasma clot, A., III, 101. synthetic, non-absorbable, use of, A., III, 818. Swallowing, in fortal monkey, A., III, 113. Sweat, ascorbic acid in, A., III, 477. vitamins in, water-soluble, A., III, 547. vitamin-B in, A., III, 268. Sweat glands, function return of, after cutting or crushing of sympathetic nerves, A., III, 332.Swedes, shoot development in, effect on, of naphthoxy- and naphthyl-acetic acids, A., IIÎ, 782. Swine, body form in, development of, A., III, 626. spleen of. See under Spleen. See also Pigs. Syenite, Wakefield, Quebec, A., I, 134. Sympathectomy, Iumbar, sterility and, A., III, thoracolumbar, in essential hypertension, A. III, 526. Syncope, induced by gravity, cardiac output in, Roentgen kymographic determination of, A., Synovial fluid, glycolytic enzymes of, A., III, 1. nitrogen content, viscosity, and volume of, A., III, 445. Synthesis, asymmetric, total, A., II, 340. Syphilis, A., III, 294. antigen of, chemistry of, A., III, 703. cardiovascular, diagnosis and treatment of, A., III, 242, electrocardiographic patterns in, A., III, congenital, erythroblastosis and, in newborn infant, A., III, 162. treatment of, with acetylarsan in children, A., III, 136. effect of vitamin-C on Wasserman fastness in, A., III, 504. flocculation reaction for, in presence of Janusgreen and Victoria-blue, A., III, 434. incidence of, among juvenile defectives, A., III, 22. plasma-vitamin-A in relation to anæmia and pregnancy in, A., III, 44. serodiagnosis of, tests for, A., III, 703. after vaccination, A., III, 80. during malaria, A., III, 70. precipitation, inhibition in, A., III, 294. slide, A., III, 842 serology of, A., III, 614. paradoxical reactions in, A., III, 560. treatment of, A., III, 281. fever as adjuvant to, A., III, 610. intensive, A., III, 60, 835. with artificial fever and mapharsen, nephrosis after, A., III, 213. with bismuth and mapharsen, A., III, 835. with clorarsen, A., III, 504. with mapharsen, A., III, 213. with penicillin, A., III, 358. See also Antisyphilities and Gonorrhea. Syrup glycerophosph. co. B.P.C., determination in, of caffeine and strychnine. C., 185. Systems, binary, from nitriles and halides of antimony, tin, and titanium, A., II, 250. statistics of, A., I, 62. thermal analysis of, A., I, 154. capillary, A., I, 12. stereometric identification of, C., 142. conjugated, A., II, 149, 245. cyclic, A., II, 329. polycyclic, A., II, 126.

Systems, disperse, molecular, aggregation of, A., I, 57.

progressive desiccation of, A., I, 59. heterogeneous and homogeneous, transitions between, A., I, 85.

micromolecular, constitution and viscosity of, A., I, 56.

mixed, dielectric constants of, A., I, 57. non-homogeneous, magnetic properties of, A., I, 147.

Szilard effect, A., I, 263.

T.

T-1824, binding of, and azo-dyes, by plasma-proteins, A., III, 393.

disappearance curves of, after injection into blood stream, A., III, 393.

toxicopathology of, A., III, 393.

T.N.T., Cumming test for, C., 118. detection and determination of, in air,

diethylaminoethanol as reagent for, C., 88. liver necrosis from, A., III, 816. a-T.N.T., metabolism of. See under Metabolism.

Tabernamontana grandiflora, proteolytic enzyme from, A., III, 690.

Tachycardia, due to cyclopropane-adrenaline anæsthesia, drugs for protection against, A., III, 833.

paroxysmal, atrial electrical axes in, A., III, 456.

pathogenesis of, A., III, 327.

rate increase of, after exercise or amyl nitrite inhalation, A., III, 14.

transient T-wave inversion after, A., III, 719.

ventricular, cyclopropane-adrenaline, failure of barbiturates to prevent, in dogs, A., III. 833.

sympathomimetic amines in relation to, during cyclopropane anæsthesia, A., III,

Tadpoles, anuran, hind limbs of, denervation and amputation of, effect of, A., III, 158. torrent-dwelling, chondrocranium of, A., III, 569.

Talc, Cape Horn, and D'Urville island, A., I. 91. north-west Nelson, and north Westland, A.,

testing of, for ceramics, C., 55.

Talc-magnesite, Cobb-Takaka district. A., I, 71.

Tall oil, determination in, of resin acids, C.,

Tallow, evaluation of, for soap-making, C., 121.

Talorchestia megalophthalma, oxygen consumption of, effect of season and temperature on A., III, 50.

Tanatarite, identity of, with diaspore, A., I, 48. Tannins, A., III, 612. determination of, in water, C., 187.

microchemically, C., 192.

from Indian teripods, constitution of, A., II,

solutions, filtration of, apparatus for, C., 123. standardisation of, for use in Niercnstein's method, C., 192.

vegetable, colour determination of solutions of, C., 150.

Tanning effect, constitution and, A., II, 6. Tantalum, adsorption of thorium on, A., I, 138. atoms, nuclei, quadrupole moment of, A., I, 185.

electrical and thermal conductivity of, A., I, 31.

repair of cranial defects with, A., III, 157. spectrum of, K-absorption, A., I, 233. L-emission, A., I, 261.

Tantalum tribromide, preparation of, with hotcold tube, A., I, 230.

Tantalum determination :-

determination of, in loparite ores, C., 12. Tape, adhesive, hypersensitivity to, A., III, 762. Tapeworm, dwarf. See Hymenolepis nana var. fraterna.

Tar, coal, acids of, determination of, in coal distillation products, with photo-electric absorptiometer, C., 164.

distillates, determination in, of naphthalene, C., 68.

phenols of heavy oil of, A., II, 98. determination in, of anthracene, C., 167. road, evaluation and testing of, C., 17. tobacco, tumour induction by, A., III, 663. Tar emulsions, determination in, of pH, C., 17.

Tar oils, determination in, of anthracene, C., 167.

Taraxacum kok-saghz, seeds, germination of, A., III, 442.

Tartaramides, hydrolysis of, A., II, 325.

Tartaric acid, detection of, Fenton's reaction for, C., 21.

potassium sodium salts, crystals, growth of, A., I, 206.

sodium salt, refractive index of, and of its mixtures with aluminium nitrate, A., I, 16. d-Tartaric acid, rotation of, effect of electrolytes on, A., I, 150.

Taste, perception of, threshold value of, at Jungfraujoch at Lauterbrunnen, A., III, 178. ζTauri, spectrum of, A., I, 49.

keto-enolic, deuterium Tautomerism, indicator in, A., II, 34. See also Isomerism.

Tea, Ceylon, fermentation of, A., III, 365. Tea leaves, tannin transformation in, A., III,

Tea polyphenol oxidase. See under Oxidase.

Tecoma stans, permeability of xylem vessels of, A., III, 226.

Teeth, decay of, prevention of, among diabetic children, A., III, 266. fluorine in water in relation to, A., III, 420.

incisor, action on, of vitamin-D in rats on calcium and phosphorus diet, A., III, 675. molar, action on, of dilute acids and acid beverages, in rats, A., III, 38.

replacement of, in moles, A., III, 785.

structure of, effect of vitamin-D on, in rats on low-calcium diets, A., III, 127. See also Dental caries, Dentistry, etc.

"Tegmental reaction," physiology of, A., III, 21. Tektite, magnetic properties of, A., I, 259.

Telenomus fariai, chromosomes and sex determination in, A., III, 572.

Teleosts, viviparous, reproductive cycle of, A., III, 253.

See also Corydora paliatus.

Tellurium, crystals, magnetic susceptibility of, A., I, 217.

Tellurium alloys with copper, determination in, of tellurium, C., 160.

Tellurium determination :-

determination of, in copper-tellurium alloys, C., 160.

in gold, spectroscopically, C., 59. microchemically, C., 160.

Temisin, A., II, 197.

Temisol. See β-4-Methyl-4-vinyl-3-isopropenylcyclohexyl-n-propyl alcohol, β-2:6-athydroxy-.

Temperature, atmospheric, effect of, on reaction of rabbits to insulin, A., III, 536. bird's, regulation of, A., III, 549.

body, hypothalamus in relation to, A., III, 179.

conditioning apparatus for, (P.), C., 202. critical, determination of, from b.p., A., I,

environmental, and protein requirement, A., III, 546.

high, and humidity, effect of, on man, relieved by cooling isolated parts, A., III, 611. wet-bulb, measurement of, below f.p., C., 47.

Temperature controller, setting of, C., 47. Tendons, sheaths of, synovial sarcomas of, A., III, 417.

Tenebrio molitor, Malpighian tubes of, arsenic excretion by, A., III, 540. Tennant, Charles, A., I, 23.

Teratoma, of ovary. See under Ovaries. retroperitoneal, digit-containing, A., III, 822.

Teredo, gonad development and sex changes in, A., III, 253.

Terephthalaldehyde, 2:5-dibromo-, and its dianil, A., II, 278.

Terephthaldithicamide, thiazole derivatives from, A., II, 382.

Terephthalic acid, thallium salt, A., II, 66. NN'-Terephthaloyldiarsanilide, A., II, 243.

Terephthaltetra-acetamide, 2:5-dibromo-, A., II, 278.

Teripods, Indian. See Casalpinia digyna. Terpenes, A., II, 343.

detoxication of, by sheep, A., III, 52. rearrangements of, A., II, 301.

Terpene alcohols, from French lavender oil, A., II, 267. Terphenyl, diradicaloid derivatives of, A., II,

189. Terphenyls, 4:4"-dihydroxy-, and their deriv-

atives, A., II, 256. 4:4"-p-Terphenylenebisdiphenylmethyl, A., II, 189.

4:4"-p-Terphenylenebisdi-p-xenylmethyl, A., II, 189.

4:4"-p-Terphenylenebisphenyl-p-xenylmethyl, A., II, 189.

a-Terpinene, and its derivatives, A., II, 343.

Testes. See Testicles.

Testicles, atrophy of, in liver disease, effect of œstrogens on, A., III, 410.

degeneration of, activity of a-tocopherol against, in rats on vitamin-E-poor diets. A., III, 202.

in vitamin-E-deficient guinea-pigs, A., III, 538.

development of, in pheasants, A., III, 786. ectopic, A., III, 32.

effect on, of testosterone propionate in hypophysectomised rats, A., III, 741. of dl-a-tocopherol in vitamin-E-deficient

rats, A., III, 538. extracts of, chimyl alcohol isolated from, A., III, 741.

fat in, Sudanophil, of dogs, A., III, 789.

hormone secretion in, evidence for, epididymal study in rats, A., III, 741. interstitial cells of, function and postnatal

history of, in bulls, A., III, 472. Leydig's, cancer of, in comparison with interstitial cell tumours in mice, A., III,

122. secreting tissue of, removal of, for choroid melanoma with metastases, A., III, 196.

swine, extract of, steroids from, with odour of musk, A., II, 139.

tumour-like changes in, after injection of pregnant mare serum in mice, A., III, 479. tumours of, A., III, 748.

after æstrogen treatment, in mice, A., III. 481.

in mice, A., III, 479.

Testosterone, action of, on corpora lutea of rats, A., III, 344.

on rat genitals treated from birth, A., III,

and its derivatives, effect of, on metabolism of girl with Addison's disease, A., III, 187.

from intratesticular pellets, spermatogenesis maintenance in hypophysectomised rats by, A., III, 342.

injection of, inhibition of estrogenic effects on rat reproductive system by, A., III, 30. metabolism of. See under Metabolism.

ointment, treatment with, of retardation in infant, A., III, 411.

propionate, effect of, on adrenals and mammary cancer incidence in mice,

A., III, 542. on adrenals and testes of hypo-physectomised rats, A., III, 741.

on nephrotic syndrome, A., III, 257.

on pituitary gonadotropic potency of castrated rats, A., III, 33.

on reproductive system of English sparrow, A., III, 254.

on spermatogenesis, A., III, 813. on thermo-regulatory function of rat

scrotum, A., III, 741. treatment with, of Addison's disease and diabetes, A., III, 807.

Testosterone, treatment with, of cryptorchidism, A., III, 190.

of hypogonadism, sublingually, A., III, 473.

of myxœdema with macrocytic anæmia. A., 111, 240.

virilism induced by, A., III, 254.

Tetanus, after head injury to immunised subject, A., III, 699.

immunisation against, A., III, 301.

immunity to, duration of, A., III, 301. toxoid dosage in, after immunisation, A., III, 509.

toxoid-induced, A., III, 150.

toxoid, allergy after injections of, A., III, 851.

anaphylaxis after, A., III, 851. antigenicity of T.A.B.C. vaccine mixed with, A., III, 78.

immunisation of, combined with diphtheria toxoids and Hæmophilus pertussis vaccine, A., III, 698.

treatment of, with antitoxin and phenol, A., III, 373.

Tetany, due to magnesium deficiency, A., III, 643.

parathyroid, treatment of, with vitamin-D, A., Ill, 464.

Tetmos. See Tetraethylthiuram sulphide. Tetmosol. See Tetraethylthiuram sulphide.

4-Tetra-acetyl-a-mannosidamino-2-methylthiopyrimidine, 6-amino-, 6-acetyl derivative, A., II, 59.

2:2':4:4'-Tetra-p-anisylazapyrromethme, A., II, 81.

ααζζ-Tetra-p-anisylhexadi-inene-aζ-diol, A., II,

Tetra(benzenesulphonylamidomethyl)methane, tetra-p-amino-, and its tetra-acetyl derivative,

A., 11, 74. 3:5:3':5'-Tetracarbethoxy-4:4'-dimethyldipyrrylmethyl bromide, A., II, 276.

Tetracosanoic acid, solidification of binary fatty acid mixtures with, A., I, 104.

Tetradeca- $\beta\delta\kappa\mu$ -tetraen-7-yne- $\zeta\iota$ -diol, A., II, 178. Tetradeca-γειλ-tetraen-η-yne-βν-diol, A., II, 178. 4'-n-Tetradecoamidodiphenylsulphone,

4-amino-, 4-acetyl derivative, A., II, 131. n-Tetradecoic acid, a-glyceryl ester, A., II, 180.

n-Tetradecylcyclohexane, A., II, 40. 1-n-Tetradecy l cyclopentanol, 3:5-dinitro benzoate,

A., II, 219. a-n-Tetradecylthiol-n-butyric acid, A., II, 151.

Tetradehydroyohimboaic acid, A., II, 63. Tetradeuterammonium bromide, tetragonal-Tetradeuterammonium bromide, cubic transformation in, A., I, 100.

NNN'N'-Tetraethylpropylene-αγ-diamine, β-hydroxy-NNN'N'-tetra-β-hydroxy-, dihydrochloride, A., II, 323.

Tetraethylthiuram sulphide, lethal action of, on scabies-producing mites, A., III, 556. soap impregnated with, treatment with, of scabies, A., III, 758.

Tetrahedrite, silver-bearing. Donetz basin, A., I, 71.

Tetrahydroabietic acid, structure of, A., II, 344. hydroxy-, lactone

1:2:3:4-Tetrahydro:soarsinoline, 2-chloro-, A., 11, 65.

1:2:3:4-Tetrahydrossoarsinolines, 2-substituted derivatives, preparation and properties of, A., II. 65.

2:3:4:5-Tetrahydrobiotin, synthesis of, A., II, 353.

Tetrahydrodeoxyvomicine, and its benzylidene derivative and methiodide, A., II, 241.

Tetrahydrodiginigenin, diacetate, A., II, 231. 3:4:3':4'-Tetrahydro-7:7'-dimethyl-1:1'-

dinaphthyl, A., II, 190. 1:2:3:4-Tetrahydro-17-equilenone, β-forms, and their semicarbazones, A., II,

266. 1:2:3:4-Tetrahydro-17-equilenone-16-carboxylic acid, methyl ester, α - and β -forms, A., II,

266. Tetrahydrofurfuryl alkyl and aryl ethers, A., II, 80.

Tetrahydrofurylamino-alcohols, A., II, 172.

δ-Tetrahydro-2-furyl-n-valeric acid,

3:4-diamino-, methyl esters, dibenzoyl derivatives, A., II, 165.

stereoisomeric forms, synthesis of, A., II, 165.

cis-Tetrahydroionol, and its allophanate, A., II,

cis-Tetrahydroionone, and its 2:4-dinitrophenylhydrazone and semicarbazone, A., II, 103.

Tetrahydrolonchocarpic acid, and its derivatives, A., II, 28.

Tetrahydroluvangetin, A., II, 167.

Tetrahydro-6-methoxyquinoline, reactions of, with a-bromo-β-amino-ketones, A., II, 279.

Tetrahydromethylvomicine, picrate of, A., II, 240.

Tetrahydronaphthalene, chloromethylation of, A., II, 133.

hydrogenation of anthracene by, A., II, 254.

1:2:3:4-Tetrahydronaphthalene, 2:3-dithiocyano-, A., II, 154.

1:2:3:4-Tetrahydro-1-naphthoic acid, β -diethylaminoethyl ester, hydrochloride, A., II, 16.

1:2:3:4-Tetrahydro-2-naphthylacetolactone, 1:7-dihydroxy-, A., II, 77.

 β -5:6:7:8-Tetrahydro-2-naphthyladipic acid. A., II, 266.

 β -5:6:7:8-Tetrahydro-2-naphthyl- Δ^a -butene- $\alpha\delta$ dicarboxylic acid, A., II, 266.

N-Tetrahydro- β -naphthylmethylethylene-diamine, A., II, 366.

3-5':6':7':8'-Tetrahydro-2'-naphthylcyclopentanone, and its semicarbazone, A., II, 266. $3-5':6':7':8'-Tetrahydro-2'-naphthyl-4^2-$

cyclopentenone, and its semicarbazone, A., II,

β-5-Tetrahydronaphthylpropionic acid, synthesis of, A., II, 133.

a-1:2:3:4-Tetrahydro-1-naphthylpropionolactone, a-2:7-dihydroxy-, A., II, 77. a-1:2:3:4-Tetrahydro-2-naphthylpropiono-

lactone, a-1:7-dthydroxy-, A., II, 77. 1:2:3:4-Tetrahydronaphthylsulphamic acid.

sodium salt, A., II, 158. growth-promoting

Tetrahydronicotinic acid, action of, A., III, 615. for Staphylococcus aureus and Bacillus proteus vulgaris, A., II, 273.

Tetrahydrophenanthrene, reactions of, A., II, 41. 1:2:3:4-Tetrahydrophenanthrene, 7-acetyl derivative, and its oxime, 9-acetyl and 7-bromoacetyl derivatives, A., II, 41.

9-benzoyl derivative, and its oxime, and 9-propionyl derivative, A., II, 42.

1:2:3:4-Tetrahydrophenanthrene, and 9-amino-, and their hydrochlorides, acetyl derivatives, A., II, 42.

9-bromo-, and its picrate, and 9-cyano-, A., II, 42.

1:2:3:4-Tetrahydrophenanthrene-9-aldehyde, A., II, 42.

1:2:3:4-Tetrahydrophenanthrene-7-carboxylic acid, and its methyl ester, A., II, 42.

1:2:3:4-Tetrahydrophenanthrene-9-carboxylic acid, and its anilide and methyl ester, A., II 42.

1:2:3:4-Tetrahydrophenanthryl-7-acetic acid. and its amide, A., II, 42.

1:2:3:4-Tetrahydrophenanthryl-9-acetic acid. and its amide and nitrile, A., II, 42.

acid, 1:2:3:4-Tetrahydrophenanthryl-9-acrylic A., II, 42.

1:2:3:4-Tetrahydrophenanthryl-9-propionic acid, and its methyl ester, A., II, 42 1:9-(2':3':4':5'-Tetrahydrophenylene)carbazole,

and its derivatives, A., II, 83. etrahydro-y-pyran, 4-hydroxy-, Tetrahydro- γ -pyran, 4-hydroxy-, and 4-acetate and p-nitrobenzoate, A., II, 245.

1':2':5':6'-Tetrahydropyrido-4':3'-4:5glyoxaline-6'-carboxylic acid, A., II, 379. Tetrahydro-y-pyrone, and its derivatives, A., II,

245. 1:2:3:4-Tetrahydroquinoline, 3-, 5-, 6-, and 7-hydroxy-, and their benzoates, A., II, 378.

a-Tetrahydro:soquinolino-n-butylbenzene, y-amino-, and its benzoyl derivative, A., II, δ -Tetrahydro*iso*quinolino- $\beta\beta$ -diphenyl-n-butanβ-ol, A., II, 347.

β-Tetrahydrossoquinolinoketones, reactions of, with Grignard reagents, A., II, 347.

 β -Tetrahydroisoquinolino- β -phenyl-tert.-amyl alcohol. See 2-(α -Phenyl- γ -methyl-n-butyl)-isoquinoline, 2-hydroxy-.

 δ -Tetrahydroisoquinolino- δ -phenyl-n-butan- β one, A., II, 347.

-Tetrahydro $\imath so$ quinolino-eta-phenylpropiophenone, and its oxime, A., II, 347. β-Tetrahydroisoquinolino-β-phenylpropio-

phenone, a-bromo-, A., II, 171.

Tetrahydroisoquinolino- β -tetrahydroquinolino- β -phenylpropiophenone, A., II, 171.

 β -Tetrahydroisoquinolino-aay-triphenyl-npropyl alcohol, A., II, 347.

β-Tetrahydrotemisol. See 4-Ethyl-3-isopropylcyclohexyl-n-propyl alcohol.

Tetrahydrothiophen, 2:5-diamino-,

2:5-substituted derivatives, synthesis of, A., II, 55.

3:4-diamino-, isomeric form of, synthesis of, and its derivatives, A., II, 142.

cis-Tetrahydrothiophen-2:5-dicarboxylic diethyl ester, dihydrazide of, A., II, 55.

Tetrahydroyobyrine, salts of, A., II, 63.

and its Tetrahydroyobyrinecarboxylic acid, hydrochloride, A., II, 63. hydro-

Tetrahydroyobyronecarboxylic acid, chloride, semihydrate, A., II, 63.

Tetrahymena geleii, cell division and oxygen consumption in, effect of urethane on, A., III,

 $\beta\delta\eta\iota$ -Tetraketodecane- $\gamma heta$ -dicarboxylic acid. diethyl ester, and its copper derivative, A., II, 212.

Tetrakispyridinerhodium, dibromo-, A., II, 377. Tetrakispyridiniumhexabromobispyridinedibromodirhodium, A., II, 377.

Tetrakispyridiniumhexachlorobispyridine μ dichlorodirhodium, A., II, 377.

 $\beta\beta\epsilon\epsilon$ -Tetramercuriphenyl-n-hexane, $\beta\beta\epsilon\epsilon$ -tetra-4':2':6'-trihydroxy-, 2':6-diacetyl derivative,

A., II, 316. 6:7-3':4'-Tetramethoxy-3-benzyl-1-methyl-1:2:3:4-tetrahydrossoquinoline, A., II, 203.

3:4':3":4"-Tetramethoxy-4:7-dihydro-1:2:5:6dibenzindolizine, A., II, 203.

2:6:2':6'-Tetramethoxy-4:4'-dimethyldiphenyl, and its 3:3'-diaminoand 3:3'-dinitroderivatives, A., II, 49.

2:3:5:8-Tetramethoxy-6:7-dimethyl-1naphthaldehyde, and its derivatives, A., II, 371, 372.

1:4:6:7-Tetramethoxy-2:3-dimethylnaphthalene, A., 11, 372.

2:3:5:8-Tetramethoxy-6:7-dimethyl-1naphthonitrile, A., II, 372.

Tetramethoxy-9-methylphenanthrenes, and their derivatives, A., II, 315. Tetramethoxyphenanthrene-9-aldehydes,

their derivatives, A., II, 315. Tetramethoxyphenanthrene-9-carboxylic acids.

and their derivatives, A., II, 315. 4:3:4':5'-Tetramethoxystilbene, 7-nitro-, A., II,

48. 3:4':3":4"-Tetramethoxy-3:4:7:8-tetrahydro-

1:2:5:6-dibenzindolizine, A., II, 203. ':5':4":5"-Tetramethoxy-3:4:7:8-tetrahydro-1:2:5:6-dibenzindolizine, synthesis of, A., II, 203.

orthothiocarbonate, Tetramethyl structure of, A., 1, 240.

Tetramethyldiaminodiphenylphenylmethylpyr-

azolylmethane, A., II, 275. 1:6-Tetramethyldiaminocycloundecane

dimethiodide, A., II, 253. Tetramethylammonium antimony hexachloride

and sulphur oxides, A., I, 182. s-trunitrobenzene derivative, A., II, 42. 1:2:9:10-Tetramethylanthracene,

αβδε-Tetramethyl-d-araboascorbic acid, A., II, 213.

2:3:4:6-Tetramethylbenzoin, and its dibenzoate, A., II, 369.

acid, 2:3:4:6-Tetramethyl- β -chlorocinnamic quinine salt, A., II, 133.

INDEX OF SUBJECTS. 321

1:1:3:3-Tetramethylisoeoumarone-4-carboxylic acid, and its aldehyde, A., II, 302. 3:3':5:5'-Tetramethyldiphenylmethane

4:4':3:3':5:5'-hexahydroxy-, and its derivatives, A., II, 160.

1:4:1':4'-Tetramethyldi-2-pyrrylmethane-3:3'-dicarboxylic acid, diethyl ester, A., II, 352. 1:4:1':4'-Tetramethyldi-2-pyrrylmethane-3:5:3'-tricarboxylic acid, triethyl ester, A., II, 352.

1:4:3':5'-Tetramethyldi-2-pyrrylmethane-3:5:4'-tricarboxylic acid, diethylmethyl esters, A., II, 351.

3:4:3':4'-Tetramethyldipyrrylmethene-5:5'dicarboxylic acid, ethyl ester, hydrobromide,

A., II, 276. 5:6-Tetramethylenehydrindene, 4:7-dibromo-, A., II, 330.

4:5-Tetramethylene-1-indanone, A., II, 133. cycloTetramethylenepyrazolone, A., II, 111. 1:1:3:3-Tetramethyl-4-ethylisocoumarone, II, 302.

2:3:4:6-Tetramethylglucose, analysis of, mixed with di- and tri-methyl glucoses, A./ II, 361. ββζζ-Tetramethyl-n-hepfane- $\gamma\epsilon$ -dione, A., 322.

(-)- $\gamma\eta\lambda$ o-Tetramethyl- Δ^a -hexadecen- γ -ol. (-)-isoPhytol.

γηλο-Tetramethyl-Δα-hexadecinen-γ-ol, A., II, 31.

1:2:6:8-Tetramethylnaphthalene, additive compound of, with s-trinitrobenzene, A., II,

NNN'N'-Tetramethyl-p-phenylenediamine, effect of, in culture, on malignant lymph nodes, A., III, 118.

Tetramethylpopulnetin, A., III, 384. 2:5:7:8-Tetramethyl-2-n-tetradecylchroman,

6-hydroxy-, and its allophanate, A:, II, 199. 2:2:6:6-Tetramethyltetrahydro-1:4-pyrone, A., II, 323, 360.

2:2:5:7-Tetramethylthiochroman, 6-hydroxy-, A., II, 271.

1:1:3:3-Tetramethyl-4-vinylisocoumarone, and its derivatives, A., II, 302.

ααωω-Tetraphenylalkenes, physical data of, A., II, 189.

2:3:9:10-Tetraphenylanthracene, A., II, 124. 2:2'-4:4'-Tetraphenylazadipyrromethine, and its

metallic complexes, A., II, 80. γγδδ-Tetraphenyl-n-butan- β -one, A., II, 10.

αβνδ-Tetraphenylchlorin, A., II, 146. αακκ-Tetraphenyl-Δαι-n-decadiene, A., II, 189.

3:4:5:6-Tetraphenyl-2-p-dimethylaminophenylisooxazine, and its derivatives, A., II, 56. 2:3:4:5-Tetraphenyl-1-p-dimethylaminopyrrole,

A., II, 56. 2:2':4:4'-Tetraphenyldipyrromethine, and its

copper bis-complex, A., II, 81. Tetraphenylene, spectrum of, absorption, and structure, A., II, 126.

Tetraphenylethylene, tetra-p-hydroxy-, A., II, 129. $aa\zeta\zeta$ -Tetraphenyl- $\Delta\beta\delta$ -hexadi-inene- $a\zeta$ -diol,

aaζζ-tetra-p-chloro-, A., II, 124. aaζζ-Tetraphenyl-Δαβγδε-hexapentaene, aaζζ-tetra-p-chloro-, A., II, 124.

aayy-Tetraphenyl-β-methyl-Δα-propylene, its dibromide, thermal decomposition of, A., II, 10.

aaσσ-Tetraphenyl-Δαρ-n-octadiene, A., II, 189. 2:2':4:4'-Tetraphenyl-meso-phenyldipyrromethine, and its copper complex, A., II, 81.

2:2':4:4'-Tetraphenyl-meso-phenyldipyrromethine, 3:3'-diamino-, dibenzoyl derivative, A., II, 81.

ωω'-Tetraphenylpolyenes, mesomerism valency tautomerism with, A., II, and 253;

C., 167. Tetrapods, middle car of, A., III, 26. 1:2:4:5-Tetraisopropylhenzene, 3-amino-, and

3-nitro-, A., II, 157. Tetrassopropyl-p-benzoquinone, A., II, 157. Tetrathionates. See under Sulphur.

ααδδ-Tetra-p-tolyl- Δ α β γ -butatriene, A., II, 124 $aa\delta\delta$ -Tetra-p-tolyl- $\Delta\beta$ -bntinene- $a\delta$ -diol, A., II, 124.

aaζζ-Tetra-p-tolyl-Δβδ-hexadi-inene-aζ-diol, A., ĬĬ, 124.

 $\alpha \alpha \zeta \zeta$ -Tetra-p-tolyl- $\Delta^{\alpha \beta \gamma \delta \varepsilon}$ -hexapentaene, A., II, 124.

Tetrazolium salts, reduction of, by bacteria, germinating seeds, and yeast, A., III, 515. Tetryl, determination of, in atmosphere, C., 88.

Textiles, analysis of, C., 24.

asbestos, determination in, of cotton, C., 169. colour of, spectrophotometry in relation to,

determination in, of pH, C., 25. mildew-resistance of, tested by soil-burial test, C., 120.

preservatives for, test for, C., 169.

Textile webs, finished, determination of physical properties of, C., 120.

Thais floridana, tolerance of, to waters of low salinity, A., III, 260.

Thalamus, electrical activity of, A., III, 402. nuclei of, anterior, destruction of, olfactory discrimination after, in rats, A., III, 647.

See Anæmia, erythroblastic, Thalassæmia. Cooley's.

d- and dl-Thalictrifolines, constitution of, and their hydrochlorides, A., II, 87.

Thalline. See Tetrahydro-6-methoxyquinoline. Thallium ions, univalent, analysis of, C., 108.

spectrum of, A., I, 137. L-emission, A., I, 92, 209. transitions in, A., I, 1.

toxicology of, clinical, A., III, 213.

Thallium molybdate, gelation of, pH in, A., I,

Thallous nitrate, rhombic, crystal structure of, A., I, 30.

Thallium organic compounds, A., II, 66. Thallium cysteine trichloride hydrochloride, A., II, 66.

di-o-p-anisyl bromides, A., II, 66. di-(p-dimethylaminophenyl) bromide, A., II, 66.

diethylethoxide, A., II, 66. di-o-hydroxyphenyl bromide, A., II, 66. di-m-nitrophenyl nitrate, A., II, 66. di-2-pyridyl chloride, A., II, 66.

di-2-(4-sulphotolyl) sulphate, sodium salt,

A., II, 66. di-o-tolyl bromide, A., II, 66.

thio-β-naphthoxide, thiophenoxide, p-thiotolyloxide, A., II, 66.

tri-(2-aminopyridine) trichloride trihydrochloride, A., II, 66.

tri-(2-bromopyridine) trichloride, A., II, 66. tripyridine tribromide and trichloride, A., II, 66.

Thallium detection and determination :detection of, C., 61.

in biological material, C., 42.

determination of, conductometrically, with potassium selenocyanate, C., 108. in biological fluids and tissues, C., 140.

in biological material, C., 91. in tissues, C., 91.

thallous, conductometrically, C., 156. Thenardite, bedded, from salt-pans at Didwana,

India, A., I, 294. Theobroma cacao. See Cacao beans.

Theophylline, tissue action of, A., III, 281. Therapeutics, chlorophyll derivatives, A., III,

Therapy, fallacies of, A., III, 297. See also Chemotherapy.

Thermal conductivity, line sources in, A., I, 169. problems in, A., I, 122. theory of, A., I, 243.

repulsion, A., I, 197.

Thermochemistry, data in, A., I, 8; C., 47. of macro- and micro-molecular substance, A., I, 56.

Thermocouples, application of, in spectro-radiometry, C., 148.

Thermodynamics, A., I, 155. laws of, A., I, 62.

of azeotropic solutions, A., I, 225. second law of, and Maxwell's demons, A., I, 178.

spectrum physics and, A., I, 27. symmetry of relations in, A., I, 119.

Thermodynamic potential. See under Potential.

Thermoelastometer, C., 150.

Thermometers, ageing of, C., 151. calibration of, C., 100. clinical, use of, A., III, 476.

indicating, (P.), C., 47. platinum resistance, C., 47.

resistance, with quartz bodies, C., 101. Thermostats, electrolytic heater for, C., 145. Thiamin, content of, in cow's milk, A., III, 824.

in peas and maize before and after cooking, Å., III, 126.

in pork, effect of thiamin intake by pig on, Â., IÍI, 45. deficiency of, alcohol metabolism in, A., III,

357. effect of, on intestinal absorption of

galactose in rat, A., III, 199. electrocardiographic changes associated with, in pigs, A., III, 326.

in cats on raw fish diet, A., III, 824.

skin temperature of extremities in cases of, A., Ill, 751.

determination of, C., 33, 34, 84. by thiochrome method, C., 84.

in African foods, C., 183. in beef muscle, C., 183.

in biological material, A., III, 672.

in bread and flour, C., 129.

in urine, C., 127. effect of salicylate on, C., 84.

p-aminoacetophenone with diazotised

reagent, C., 182. effect of, in fatty acid synthesis, A., III, 672. on fertility and lactation in mouse, A., III,

547. on fungal growth, A., III, 141, 290.

on hyperthyroidism, A., III, 45. on riboflavin in urine, A., III, 672; C., 183.

on Salmonella choleræ-suis infections in pigs, A., III, 358.

on work performance in rats, A., III, 685. effect of increasing dose of, on its utilisation efficiency, A., III, 423.

formation of, by Actinomyces, A., III, 142. hydrochloride, determination of, fluorimetric-

ally, glass standards for, C., 46. in Peruvian foodstuffs, A., III, 126. hydrolysis of, effect of, pH on, A., I, 157. in lake waters and aquatic organisms, A., III, 199.

in liver, in riboflavin deficiency, A., III, 752. in pasteurised and raw milk, A., III, 125.

in skeletal muscle of infants and children, A., III, 486. inactivation of, by fish tissues, A., III, 366.

inhibition of nervous transmission in end plates and synapses by, A., III, 831.

intake of, controlled, effect of, on normal young men, A., III, 126. relation of, to blood regeneration, A., III, 752.

to riboflavin, in man and rats, A., III, 199. requirements of, clinical study of, A., III, 353. for pigs in relation to fat content of diet, A., III, 487.

for pre-school children, A., III, 672. in tropical heat, A., III, 486.

specific dynamic action of, with glucose and oleic acid, A., III, 275.

stability of, in milk, effect of incubation on, A., III, 423.

use of, effect of carbohydrate and fat intake on, in man, A., III, 752. See also Aneurin and Vitamin-B₁.

Thianthren, metallation of, A., II, 55.
Thianthren, 2-amino-, N⁴-acetylsulphanilyl and sulphanilyl derivatives of, A., II, 55. 1-bromo-, A., II, 55.

Thianthren-1-carboxylic acid, A., II, 55. 1-Thianthrenylamine, and its N^4 -acetyl-sulphanilyl and sulphanilyl derivatives, A.,

Thiazinocyanines, A., II, 26.

Thiazole, fluorescent irradiation products of, A., II, 61.

See also Fluorochrome.

Thiazole, 2-amino-2-p-amino-, 2-acetyl derivative, A., II, 369. Thiazoles, A., II, 205.

Thiazole-2-carboxylic acid, 5-amino-, and its 2-amide, A., II 173. Thiazole-5-carboxylie acid, 2-amino-, A., II, 369. 4':2"-Thiazolinylsulphamylazobenzene,

2:4-dihydroxy-, A., II, 368. Thiazolium salts, ring fissions with, A., II, 112.

4'-2"-Thiazolylsulphamylazobenzene, 2:4-dihydroxy-, A., II, 368.

5-p-2'-Thiazolylsulphamylbenzeneazoquinoline, 8-hydroxy-, A., II, 368.

δ-4-Thiazyl-n-butyric acid, δ-2-amino-, and its hydrochloride, A., II, 313.

 μ -4-Thiazyl-n-dodecoic acid, μ -2-amino-, and its hydrochloride, A., II, 313.

y-4-Thiazylpropionic acid, y-2-amino-, and its hydrochloride, A., II, 313.

 ϵ -4-Thiazyl-*n*-valeric acid, ϵ -2-amino-, and its hydrochloride, A., II, 313.

Thiclaviopsis basicola, culture and pathology of, A., III, 290.

2-Thienyl methyl ketone, 5-amino-, 5-acetyl derivative, A., II, 369.

(+)-Thioacetic acid-α-propionic acid, A., II, 322. Thioacetophenone, condensation of, with activated nickel, A., II, 329.

2-Thio-3-p-anisyl-5-methyltetrahydro-1:3:5thiadiazine, A., II, 206.

Thiobacillus thio-oxidans, cytology and microchemistry of, A., III, 297.

Thiobenzoylguanidines, substituted, intramolecular transformations of, A., II, 190.

N''-Thiobenzoyl-NN'N''-triphenyl-N-ethyl-

guanidine, A., II, 191. N"-Thiobenzoyl-NN'N"-triphenyl-N-methylguanidine, and its hydrochloride, A., II, 191. Thiobismol, in induced malaria, A., III, 209.

Thiocarbamide, compound of, with lead nitrate, A., I, 68.

determination of, C., 140.

in serum ultrafiltrates, C., 77.

effect of, on blackening and respiration of potatoes, A., III, 612.

on fish development, A., III, 729.

on thyroid, C., 175. chick, A., III, 587.

rabbit, A., III, 339. pulmonary cedema produced by, in rats and its relation to age, A., III, 362.

solubility in, of gold and silver, A., I, 35. synergistic action of, with sulphathiazole, A., III, 436.

treatment with, of hyperthyroidism, A., III, 185.

of thyrotoxicosis, A., III, 587, 610, 807. resistance to anoxia after, A., III, 534. use of, as measure of change in body-water,

A., III, 349. Thiocarbimides, of the hydroquinine series, radical exchange of, with thiocarbamides, A.,

5-Thiocarbimidohydroquinine, A., II, 174.

5-Thiocarbimido-optoquin, and its picrate, A., II, 174.

Thiocarbonates. See under Carbon.

Thiocarbonyls, A., II, 329.

4-Thio-2-o-carboxyphenyl-1:4-dihydroquinoline, lactam of, and its phenylhydrazone, A., II, 82.

2-Thio-3-(3'-chloro-4'-hydroxyphenyl)-5methyltetrahydro-1:3:5-thiadiazine, A., II, 206.

2-Thio-3-(p-chlorophenyl)-5-methyltetrahydro-1:3:5-thiadiazine, A., II, 206.

Thiochroman, derivatives of, with tocopheroI structures, A., II, 271.

Thiochrome, fluorescence of, in presence of electrolytes, C., 183.

Thiocyanic acid, allyl, a- and \$-butyl, octyl, and a-propyl esters of, A., II. 36.

benzyl ester, chlorination of, A., II, 76. copper and mercury salts, reaction of, with a-naphthylamine, in aqueous solution, C.,

106. crotyl ester, A., II, 36. y-ethylallyl ester, A., II, 37. liquid and solid, A., II. 71.

nickel salt, light absorption of solutions of, A., I, 3.

Thiocyanic acid, potassium salt, activity and surface tension of sulphur dioxide solutions of, A., I, 83.

See under Blood. salts, in blood.

treatment with, of arterial hypertension, A., III, 244.

of hypertension, goitre during, A., III, 807.

thrombophlebitis during, A., III, 527. 180Thiocyanic acid, cuprous salt, A., I, 158.

a-Thiocyanobutyric acid, allyl, a- and β -butyl, octyl, and a-propyl esters of, A., II, 36. Thiodiazoles, formation of, A., II, 352.

(+)- and (-)-Thiodi-a\beta-propionic acids, A., II, 322.

Thioethers, reaction of, with ozone, A., II, 359.

5-Thioformamido-4-methylamino-2-methylpyrimidine, 6-amino-, A., II, 350. 5-Thioformamidomethylpyrimidine

2:4-d:amino-, and its hydrochloride, A., II, 147.

5-Thioformamido-4-d-xylosidamıno-2methylpyrimidine, 6-amino-, 4-triacetyl derivative, A., II, 350.

Thiogermanic acid, preparation and properties of, A., I, 45.

Thioglycollic acid. See Acctic acid, thiol-. 2-Tbio-3-(p-hydroxyphenyl)-5-methyltetrahydro-1:3:5-thiadiazine, A., II, 206. isoThioindigotin, A., II, 200.

Thiol compounds, reaction of, with thymonucleic

acid, C., 190. 2-Thio-(1'-methyl-5'-glyoxalinylmethylidene)hydantoin, A., II, 348.

2-(3'-Thionaphthenyl)cinchonic acid, A., II, 379.

2-(3'-Thionaphthenyl)quinoline, and its picrate, A., II, 379.

2-Thio-3-a-naphthyl-5-methyltetrahydro-1:3:5thiadiazine, A., II, 206.

2-Thion-4-(3':4'-diethoxyphenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.

2-Thion-4-(4'-diethylaminophenyl)-6-methyl-1:2:3:4-tetrabydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.

2-Thion-4-(3':4'-dimethoxyphenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.

2-Thion-4-(4'-dimethylaminophenyl)-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acid, ethyl ester, A., II, 204.

2-Thion-4-R-6-methyl-1:2:3:4-tetrahydropyrimidine-5-carboxylic acids, ethyl esters, A.,

II. 204. Thionyl cyanate, A., I, 111.

Thionylamines, constitution of, A., II, 35. Thiophan, derivatives, A., II, 167, 305.

Thiophan-2-carboxylactone, 4-hydroxy-, A., II, 168.

Thiophan-3-one, and its semicarbazone, A., II,

Thiophan-3-one, 2:4-dioximino-, A., II, 168. Thiophan-2-β-propionic acid, 3:4-dioximino-, and its phenylosazone, A., II, 169.

Thiophen-2-carboxylamide, 5-amino-, chloride, and 5-nitro-, A., II, 369. hydro-

Thiophen-4-carboxylic-2-valeric acid, 3-amino-, diethyl ester, A., II, 353.

Thiophenol, o-nitro-, and its methyl ether, azo-compounds from, A., II, 368.

Thiophen- $\bar{2}$ - β -propionic acid, 3:4-dihydroxy-, A.,

2-Thio-3-phenyl-5-(β -diethylamino)tetrahydro-1:3:5-thiadiazine, A., II, 206.

2-Thio-3-phenyl-5- $(\beta$ -hydroxyethyl)tetrahydro-1:3:5-thiadiazine, A., II, 206.

2-Thio-3-phenyl-5-methyltetrahydro-1:3:5thiadiazine, A., II, 206.

Thiophosphoryl bromide and bromofluorides, A., I, 45.

isocyanate, A., I, 111. a-Thiosemicarbazido-β-phenylpropionic acid, A., II, 204.

Thiosulphuric acid. See under Sulphur. 2-Thio-1:2:3:4-tetrahydro-5-pyrimidinecarboxylic acids, ethyl esters, A., II, 204. Thiouracil, cretinism induced by, in rats, A., III, 339.

determination of, in body fluids and tissues, C., 140.

effect of, on chick thyroid, A., III, 587. on di-iodotyrosine and thyroxine form-

ation by rat thyroid, A., III, 587. on iodine in thyroid, A., III, 587.

on metabolism of tissues from normal and hyperthyroid rats, A., III, 729. on organs, A., III, 727.

on thyroid, C., 175.

on thyroid in Graves' disease, A., III, 807. metabolic effects of, on adrenal function, A., III, 589.

thyroid storage of, effect of potassium iodide and thyrotropic hormone on, A., III, 653.

toxicity of, in normal and thyroidectomised rats, A., III, 534.

treatment with, of hyperthyroidism, A., III, 185.

Thiourea. See Thiocarbamide.

Thioxanthene-10-carboxylic acid, β -diethy aminoethyl ester, hydrochloride, A., II, 16.

Thizotropy, theory of, A., I, 60.
Thomas-Gibbs equation. See under Equations. Thoracic cavity, size of, after resection of lung tissue, A., III, 245.

Thoracic duct, ligation of, and hæmorrhagic plasma-protein level, A., III,

motor control of, A., III, 641.

Thoracoplasty, nitrous oxide anæsthesia for, A., III, 495.

Thorax, surgery of, anosthesia for, A., III, 429. Thorianite, Ccylon, radium content of, A., I, 259. Thorium, adsorption of, on tantalum, A., I, 138. disintegration of, A., I, 189.

neutron emission from, A., I, 189.

fission of, A., I, 1.

lead equivalent of, with respect to X- and y-rays, A., I, 137. position of, in periodic system, A., I, 233.

Thorium arsenate, colloidal, gels, optical properties of, A., I, 173.

molybdate, colloidal, gels, optical properties of, A., I, 173.

oxide, electrical conductivity of, A., I, 118. in mixtures with ceria, A., I, 283.

phosphate, colloidal, gels, opacity of, A., I,. 36.

Thorium determination :-

determination of, in tungsten wire, spectro-graphically, C., 109.

Thorium-uranium ratio in minerals and rocks, A., I, 258.

DL-Threo- γ -chloro- $a\beta$ -dihydroxybutyric potassium salt, A., II, 326. DL-Threonamide, and its tribenzoate, A., II,

DL-Threonic acid, and its chloride, A., II, 326. Threonine, deamination of, biologically, A., III,

146; C., 41. DL-Threonolactone, and its dibenzoate, A., II,

DL-Threose, and its derivatives, A., II, 326.

Throat, human, cytoplasmic virus bodies in, A., III, 375. treatment of, vitamins in, A., III, 582.

Throat diseases, prevention and treatment of, biotherapy and chemotherapy for, A., III, 805.

sore, streptococcal, A., III, 77.

Thrombi, calcified, in human placenta, A., III,

Thrombin, coagulation and fibrinolysis by, A., III, 10.

inactivation of, oxidised cellulose and, A., III, 717.

stabilisation of, in aqueous solutions, A., III, 558. use of, in surface treatment of burns, A., III, 795.

See also Antithrombin.

Thromboangiitis obliterans, in women, A., III. 798.

medico-legal problems of, A., III, 215. venous valves in, A., III, 14.

Thrombocytosis, post-operative, A., III, 634. Thrombophlebitis, during thiocyanate therapy of hypertension, A., III, 527. Thrombosis, A., III, 172.
after closed injuries to extremities, A., III, 11.

allergy as factor in, A., III, 392. arterial, localised, of indeterminate origin, A., III, 243.

climatic conditions at Davos in relation to, A., III. 11.

coronary, heart size and pulmonary findings during, A., III, 15.

survival after, A., III, 639.

in gynecology and obstetrics, A., III, 11.

mesenteric, A., III, 243.

prevention of, with dicoumarin, A., III, 392. puerperal, treatment of, with dicoumarin, A., IIĪ, 575.

treatment of, with dicoumarin, A., III, 11. Thymectomy, treatment with, of myasthenia gravis, A., III, 176.

o-Thymol, nitroso-, A., II, 366. Thymol-m-cresol, formation of, from m-cresol, by condensation reactions, A., II, 366.

Thymoma, malignant, A., III, 822.

Thymonucleic acid, constitution of, A., II, 112. reaction of, with thiol compounds, C., 190. sodium salt, solutions, effect of pH on properties of, A., II, 85.

Thymoxyethyldiethylamine. See F929. Thymoxysilan, trichloro-, A., II, 191.

Thymus, changes in, with remyasthenia gravis, A., III, 101. reference hormone of, effect of, on tissue oxidations, A.,

III, 339. response of, to adrenotropic

administration in rats, A., III, 342. weight of, in relation to body weight in adrenalectomised and castrated rats, A., III, 731.

Thymusnucleic acids, depolymerases for. See under Depolymerases.

Thyone briaereus, influence on, of pH and oxygen tension, A., III, 244.

oxygen consumption of, as function of oxygen tension and pH of surrounding medium, A., III, 260.

Thyroid, A., III, 445.

abnormalities of, appetite and, A., III, 250. activity of, effect of, on renal function, A., III, 27.

effect of low atmospheric pressure on, in rats, A., III, 329.

biochemistry of, A., III, 464.

cell height response in, assay of thyrotropic activity by, in guinea-pigs, A., III, 188. cells and follicles of, properties of, A., III, 712.

chemicals depressing, A., III, 250.

conversion of iodides into di-iodotyrosine and thyroxine by, inhibition of, A., III, 407, 587, 728.

desiccated, chemical assay of, A., III, 652. diabetes and, A., III, 588.

diuretic action of, in diabetes insipidus, A., III, 728.

effect of, on renal functions, A., III, 596. on sterility in normal and hypothyroid

women, A., III, 464. on wound healing, A., III, 818.

effect on, of hypotonic solutions, A., III, 449. of sulphonamide feeding, A., III, 587. of thiouracil and thiourea, A., III, 587; C., 175.

of thiourea, in rabbits, A., III, 339.

enlargement of, in rats fed thiourea, failure of hormones to prevent, A., III, 728.

feeding with, resistance to potassium poisoning in rats after, A., III, 340. fluorescent and histochemical reactions in, in

rats, A., III, 406.

follicles of, colloid of, protein and organic iodine in, in rats, A., III, 27.

function of, as factor in gall-bladder disease and formation of gall-stones, A., III, 816. water intoxication in relation to, A., III,

hæmopoiesis and, A., III, 728.

Thyroid, hormones of, effect of, on cholesterol metabolism of adrenals, A., III, 588.

inorganic, iodide accumulation by, in vitro, A., III, 587.

iodine content of, effect of thiouracil on, A., III. 587.

in South Indian animals, A., III, 406.

iodine metabolism of, effect of thiourea on, A., III, 406.

in rats exposed to high and low temperatures, A., III, 533. lymph sac of, drainage, extent, and structure

of, in cats, A., III, 445.

oral, tolerance to, in subjects without myxcedema, A., III, 26. physiology of, A., III, 806. preservation of, A., III, 533.

proteolytic activity of, A., III, 27.

relation of, to anterior pituitary in fowls, A., III, 732. to pregnancy toxemia, A., III, 465.

resting and stimulated, radio-iodine behaviour in, A., III, 533.

structural changes in, in ageing female rats, A., III, 629.

treatment with, effect of, on rat tissue respiration, A., III, 728.

of myxœdema with macrocytic anæmia, A., III, 240.

of retinitis, A., III, 461.

See also Glands, endocrine, Hypertension, etc. Thyroid diseases, blood-pyruvic acid level in, A., III, 672.

creatine excretion and metabolism in, A., III, 51.

cysts, ultimobranchial cystadenomata and, in rats, A., III, 569.

goitrous, due to potassium thiocyanate and thiouracil, iodine uptake by, in rats, A., III,

gonadotropin in urine in, excess of, A., III, 807.

liver damage in, A., III, 27.

pathogenesis and surgical treatment of, A., III, 339.

serum lipins in, A., III, 168.

tumours, produced by 2-acetamidofluorene and allylthiourea, A., III, 807.

See also Goitre, Graves' disease, Myxœdema Thyrotoxicosis, etc.

Thyroid products, cardiac and metabolic actions of, A., III, 727.

production of, A., III, 653.

Thyroidectomy, effect of, on resistance to low environmental temperature, A., III, 27.

normal basal metabolic rate maintenance after, A., III, 26.

patients ten years after, A., III, 652. resistance to anoxia after, A., III, 534.

Thyrolactin, feeding with, increased milk and milk fat production after, A., III, 411. Thyroproteins,

hyroproteins, highly active, bioassay, and use of, A., III, 107. formation,

Thyrotoxicosis, biological oxidation in, A., III,

progressive exophthalmos in, A., III, 648. treatment of, surgical, as related to geriatrics, A., III, 27.

with thiourea, A., III, 587, 610, 807. See also Graves' disease, Myxædema and

Thyroid diseases. Thyrotropin, cell height response to, in guinea-

pigs, A., III, 188. effect of, on cervical sympathetic, and vagal ganglia in guinea-pigs, A., III, 188.

Thyroxine, determination of, C., 175. effect of, on blood-magnesium partition, A.,

III, 524. on cholesterol and neutral fat in body and

liver of rats, A., III, 727. on phosphorus metabolism in mice, A., III,

formation of, by thyroid tissue, effect on, of cytochrome oxidase inhibitors, A., III, 216.

of thiouracil, in rats, A., III, 587. inhibiting effect of inorganic iodide on, A., III, 728.

Thyroxine, formation of, from di-iodotyrosine,

in vitro, A., III, 728. intravenous, reaction to, in subjects without

myxœdema, A., III, 26. treatment with, and low-fat diet, of acne conglobata and perianal pyoderma, A.,

Ticks. See Dermacentor andersoni.

dog. See Dermacentor variabilis.

Tiemann-Reimer reaction, application of, to benzaldehyde, A., II, 135. Tilden lecture, A., I, 65.

Tilghman, Benjamin Chew, A., I, 133.

Timber. See Wood.

Timothy grass. See under Grass. Tin in lievrite, A., I, 47.

Tin alloys, analysis of, spectrochemically, C., 62. with iron, X-ray structure of, A., I, 195. with lead, thickness of coatings of, on copper wire, C., 157.

with magnesium, precipitation from, A., I, 11. with zine, eutectic, superconductivity of, A.,

superconducting, magnetic properties of, A., I, 11.

Tin compounds, soluble, intravenous injections of, A., III, 61.

Tin tetrachloride, equilibrium of, with m-dinitro-benzene, A., II, 253.

halides, redistribution reaction in, A., I, 228. plumbite, crystal structure of, A., I, 30. Stannous salts, reduction of ferric chloride by,

A., I, 252. Stannous chloride, oxidation of, A., I, 130.

telluride, spectrum of, absorption, A., I, 116.

Tin organic compounds, A., II, 66. Tin a-butyl triiodide, A., II, 66.

dicarbethoxymethyl dibromide, A., II, 66. diphenyl, diamagnetism of, A., I, 199. diphenyl o-hydroxyphenyl, A., II, 66.

methyl halides, structure of, from electron-

diffraction, A., I, 167. tetra-n-dodecyl, A., II, 66.

tetra-n-hexadecyl, A., II, 66. tetra-n-octadecyl, A., II, 66.

tetra-n-tetradecyl, A., II, 66. tri-n-dodecyl chloride, A., II, 66.

tri-n-hexadecyl chloride, A., II, 66. tri-n-octadecyl chloride, A., II, 66.

triphenyl p-carboxyphenyl, A., II, 66. triphenyl 4-dimethylamino-3-(4'-nitro-

benzeneazo) phenyl, A., II, 66. triphenyl o- and p-dimethylaminophenyls,

triphenyl o- and p-hydroxymethylphenyls, A., IĬ, 66.

triphenyl o- and p-hydroxyphenyls, A., II. 66. triphenyl o-methoxymethylphenyl, A., II,

tri-n-tetradecyl chloride, A., II, 66.

Tin detection, determination, and separation :detection of, with dihydroxotetrachloroplatinic acid, A., I, 133.

determination in, of copper and lead, C., 3. determination of, C., 41.

by hypophosphorous acid reduction, C., 157.

colorimetrically, with hæmatoxylin, C., 8. with silicomolybdate, C., 157.

in babbitt metal, C., 4. in brass and bronze, volumetrically, and its

separation from copper, C., 109. in lead and its alloys, C., 10.

in ores, C., 9. with mercuric chloride, C., 9.

with methylene-blue, C., 157. Tin ores, Renison Bell, Tasmania, A., I, 207.

Tin powder, effect of heating on, and its mixtures with copper powder, A., I, 180. Tinnitus, causes and treatment of, A., III. 727.

Tintometers, colour measurement with, C., 149. Tissues, absorption rates of fibrin films in. A.. III, 795.

aldehydes of. Sec Plasmal. amyloid, fibrinoid, and hyaline degeneration

of, ætiology of, A., III, 117.

324 Tissues, aneurin pyrophosphate content of, A., III, 199. autopsy, human, determination in, of carbonic anhydrase, C., 87. benign, malignant, and normal, glycolytic and respiratory metabolism of, A., III, 819. carbonic acid-binding curve, reaction, and titration curve of, A., III, 50. carrier for, for histology, C., 193. chemistry of, A., II, 327. determination in, of bromine, C., 126. of ethyl alcohol, A., III, 276. of pH, C., 42. of inositol, C., 91. of respiratory enzymes, C., 37. of thallium, C., 91. dried, restoration of, A., III, 238. effect on, produced by phytoncides, A., III, 362. fixative for, A., III, 161. freezing-drying of, apparatus for, C., 193. rowth of, nucleic acids and, A., III, 676. eat injury to, A., III, 721. iodine location in, autographically, A., III, 162. lactic acid concentration in, in animals, A., III, 576. lipin distribution in, A., III, 348. living, f.p. of, A., III, 153. heat production in, at a distance, A., III, 137 lymphoid, effect on, of adrenotropic hormone, in relation to scrum-proteins, A., III, 733. of pituitary hormone, A., III, 109. structure and function of, influence of hormones on, A., III, 733. micro-grinder for, C., 93. morpholgic analysis of, A., III, 158. neoplastic and normal, components of, A., III, 666. oxidative response of, to succinate and p-phenyldiamine, A., III, 748. nephrogenic, stimulation of, by normal and abnormal inductors, A., III, 90. non-hæm iron content of, in cancer-strain mice, A., III, 748. nucleic acids of. See under Nucleic acids. permeability of, effect of spinal section on, A., III, 101. plant. See Plant tissues. proteins of, composition of, as influenced by inanition and hepatotoxic agents hydrazine and phosphorus, in rabbits, A., III, 605. digitoxin-binding power of, in rabbits, A., III, 554. regenerating, embryonic grafts in, A., III, 518. regenerative capacity of, restitution of, by grafts from other regions, A., III, 787. retroperitoneal, tumours of, smooth muscle, A., III, 822. sections of, faded, restaining of, A., III, 390. preparation of, C., 193. skeletal, effect on, of potassium iodide in growing mice, A., III, 517. slices, preparation of, for respiration studies, use of low temperature during, A., III, 754. staining of, Romanowsky, acetone and methanol in, A., III, 161. vitamin-B in, A., III, 198, 267, 268. Tissue extracts, animal, use of, in wound healing, A., III, 818. cell-growth-activating, effect of, on skin wounds, A., III, 541. homologous, effect of, on epithelisation rate, A., III, 161. Titanates. See under Titanium. Titanium, energy of electronic configuration $3d^2 + p$ of, A , I, 137. solubility of oxygen in, A., I, 34. thermal expansion of, A., I, 122. Titanium alloys with zinc, rolled, A., I, 244. Titanium trihalides, preparation of, with hot-cold tube, A., I, 230. oxide, determination of, in Portland cement,

Titanates, structure of, A., I, 120.

Peroxytitanates, A., I, 68.

INDEX OF SUBJECTS. Titanium determination :determination of, in alloy steel, C., 9. in cement, C., 163. in iron, C., 9. in unsintered carbides, photometrically, C., 163. polarographically, C., 9. Toads, South American, venom of, constituents of, A., III, 762. See also Bufo. Tobacco, classification of, C., 185. determination in, of nicotine and nornicotine, C., 86, 185. of resin and wax, C., 137. determination and occurrence in, of maltose, monosaccharides, and sucrose, C., 87. fire-cured, analysis of, C., 185. polyphenoloxidase of, A., III, 285. tar from. See under Tar. Tobacco alkaloids, detection of, in marc, C., 137. Tobacco plants, antagonism and absorption of ions in, A., III, 309. healthy and mosaic-infected, respiration of, A., ĬII, 376. leaves, diseased and healthy, phosphate in, A., III, 314. glucosidases in, A., III, 316. nicotine content of, effect on, of aminoacids and nicotinic acid, A., III, 310. physiological ontogeny in, A., III, 377. potassium-deficient, starch formation in, A., roots, nicotine formation in, A., III, 853. seed, stored, viability of, A., III, 567. treatment of, with chloral hydrate, A., III, 384. o virus, mosaic, acyl derivatives, biological activity of, A., III, 304. Tobacco biological activity of, A., III, 376. cleavage of, into proteins, A., III, 778. combination of, with pepsin and trypsin, A., III, 690. denaturation of, by urea, A., II, 67; III, 304. dimerisation of, A., III, 611. effect on, of formaldehyde and mercuric chloride, A., III, 512. of host nutrition, A., III, 314. inhibition of, by nitrogen deficiency, A., III, 304. particle shape and size of, A., III, 838. protein, A., III, 850. cleavage of, A., III, 778. recovery of, from its acyl derivatives, A., III, 376. sedimentation of, A., III, 838. Tocols, optically active, A., II, 376. Tocopherol, action of, on vitamin-A, A., III, 425. brain- and muscle-lipins in rats deprived of, A., III, 49. level of, in blood-scrum, during tocopherol therapy, A., III, 128. serum-, in relation to muscular dystrophy, A., III, 796. See also Vitamin-E. Tocopherols, determination of, fluorometrically, C., 85. in foods, C., 85. molecular distillation for elimination of other reducing substances in, C., 85. effect of, on phosphorus metabolism, A., III, 272. a-Tocopherol, activity of, against sterility and testicular degeneration in rats on vitamin-Epoor diets, A., III, 202. deposition and storage of, in abdominal fats, A., III, 604. polarographically, of, determination presence of cholesterol, fish oil, and sesame öil, C., 134. effect of, administered to nursing rats, A., III, 604. in oxidation of plant and animal fats, A., III, 753. prophylactic requirement of rat for, A., III, steric isomerides of, A., II, 80.

dl-a-Tocopherol, acetate, effect of, on testioles of vitamin-E-deficient rats, A., III, 538. 150-a-Tocopherol. See 2:5:7:8-Tetramethyl-2-ntetradecylchroman, 6-hydroxy-. y-Tocopherol, determination of, by diazonium coupling, in presence of a- and \$\beta\$-tocopherols, C., 134. a- and y-Tocopherols, natural, A., II, 55.
Tolazole, 2-nitro-, derivatives of, A., II, 277. o-Tolidinediazidocopper, A., I, 290. o-Toluamide, 4-nitro-, A., II, 221. Toluene, addition to, of dienes, A., II, 328. determination of, in coal gas, C., 68. nitration of, in vapour-phase, A., II, 123. poisoning by. See under Poisoning. Sluene, 2-chloro-6-nitro-5-amino-, Toluene, derivative, A., II, 260. 4-iodotrihydroxy-, diacetyl derivative, and its methyl ether, A., II, 49. 4-iodo-2:5:6-tr:hydroxy-, triacctyl derivative, A., II, 49. o-nitro-, action of alkalis on, A., II, 126. p-nitro-, reaction of, with sodium polysulphides, A., II, 101. sulphonation of, by sulphur trioxide, A., I, 286.2:4:6-trinitro-, condensation arylnitroso-compounds, A., II, 371. iso- and poly-morphism of, A., I, 100. reduction of, by succinic dehydrogenase, A., III, 138. See also T.N.T. 2:4-dinitro-6-amino-, and its derivatives, A., II, 256. 2:6:dinitro-4-amino-, derivatives of, A., II, 255. α -m-Tolueneazo- β -ketobutyrolactone, A., II, 332. p-Toluene-p'-azophenylarsonic acid, A., II, 243. 7-p-Tolueneazo-1-phenyl-1:2:3-triaza-5:6benzoindene, 4-hydroxy-, A., II, 145. 5-p-Tolueneazo-2-p-tolyl-4-methyl-2:1:3triazole, 3-oxide, A., II, 237. Toluene-3:4-dithiol as reagent for tungsten, C., 111. p-Toluenesulphinic acid, thallium salt, A., II, 66. 3-p-Toluenesulphonamidophthalic acid, ethyl ester, A., II, 373. 2-p-Toluenesulphonamidoterephthalaldehyde, 5-bromo-, A., II, 278. p-Toluenesulphondi-β-chloroethylamide, A., II, 202. p-Toluenesulphondi- β -hydroxyethylamide, II, 202. p-Toluenesulphonic acid, 3-bromo-5-amino-ptolyl ester, A., II, 97. 3-bromo-5-nitro-p-tolyl ester, A., II, 97. 4:6-dibromo-2-aminophenyl ester, A., II, 97. 4:6-dibromo-2-nitrophenyl ester, A., II, 97. esters, A., II, 293. ethyl ester, spectrum of, Raman, A., I, 213. p-Toluenesulphonmorpholinomethylimide, II, 238. p-Toluenesulphon-4-phenylpiperidide-4'-nitrile, A., II, 202. β -(a-p-Toluenesulphonyl- γ' -hydroxy- $\beta'\beta'$ dimethylbutyramido)ethanesulphonic acid. A., II, 190. p-Toluenesulphonylpantothenolactone, A., II, 190. o- and p-Toluenesulphonylxanthylamides, A., II, 156. p-Toluidine, equilibrium of, with acetic acid, A., I. 154. Toluidine-blue, treatment with, of typhus, A., III, 607. Toluidinediazidocopper, A., I, 290. a-o- and -m-Toluidinodiphenylacetic acids, A., II, 77. 3-p-Toluidino-1:1-diphenylindane, and its hydrochloride, A., II, 193. N-p-Toluoylarsanilic acid, A., II, 243. N-p-Toluoylaspartic acid, A., II, 222. o-, m-, and p-Tolyl vinyl ethers, A., II, 97. p-Tolyl sulphate, p-bromoaniline salt, A., II, 256. 2-p-Tolylaminotriphenylcarbinol, A., II, 276. o-Tolylarsonic acid, 4-nitro-, A., II, 242. 5-nitro-, A., II, 242.

5-Tolyl benzyl ketone, 3-chloro-2-hydroxy-, and its 2-methyl ether, A., II, 344.

N-c-Tolyl-N-n-butylcarbamide, 4-chloro-, A., II, 255.

a-p-Tolylisobutyric acid, a-2-hydroxy-, and its amide, A., II, 302.

1-o- and 1-p-Tolyl-4-camphorylthiosemicarbazides, A., II, 232.

o-Tolylcyano-acetic acid, ethyl ester, A., II, 273. o-Tolyldi-p-tert.-butylphenylcarbinol, A., II, 329. m-Tolyldi-p-tert.-butylphenylmethyl chloride, A., II, 329.

N-o- and -m-Tolyl-N'N'-diethylsulphamides, A., II. 364.

3-o-Tolyl-2:4-diketotetrahydroquinazoline,

5-p-Tolyl-1:3-N-dimethyl-5-n-propylhydantoin, A., II, 348.

N-o- and -m-Tolyl-N'N'-dimethylsulphamides, A., II, 364.

m-Tolyldi-p-tolylcarbinol, A., II, 329.

m-Tolyldi-p-tolylmethyl chloride, A., II, 329. N-o-Tolyl-N-ethylcarbamide, 5-bromo-,

4- and 5-chloro-, A., II, 255. N-o-Tolyl-N'-ethylcarbamide, N-5-bromo-, A., II, 255.

N-p-Tolyl-N-ethylcarbamide, 3-bromo-, A., II, 255.

2-p-Tolyl-7-trifluoromethylquinoline, A., II, 171. p-Tolylmesitylacetic acid, A., II, 369.

 β -p-Tolyl- γ -methyl- Δ^{α} -pentenoic acid, and its ethyl ester, A., II, 125.

4-(o-Tolyl)-1-methylpiperidine-4-carboxylic acid, ethyl ester, and its hydriodide, A., II, 272.

4-(o-Tolyl)-1-methylpiperidine-4-nitrile, hydrochloride and picrate of, A., II, 273.

5-p-Tolyl-3-N-methyl-5-n-propylhydantoin, A., II, 348.

 β -p-Tolyl- γ -methylvaleric acid, and its ethyl ester, A., II, 125.

 β -p-Tolyl- γ -methyl-n-valeric acid, β -hydroxy-, ethyl ester, A., II, 125.

a-p-Tolyl-a-3-nitromesitylethylene, β -nitro-, A., II, 298.

10-p-TolyIphenothiazine, 3'-amino-, and 3'-nitro-, A., II, 353.

y-o-Tolylpropane-αβμ-tricarboxylic acid, ethyl ester, A., II, 329.

N-o-Tolyl-N-n-propylcarbamide, 5-bromo-, A., II, 255.

5-p-Tolyl-5-n-propylhydantoin, A., II, 348. y-p-rolyl-a-isopropyl-1 a-pentenoie acid, ethyl

ester, A., II, 125. y-p-Tolyl-α-isopropyl-n-valeric acid, A., II, 125.

 γ -p-Tolyl-a-isopropylvaleric acid, β -hydroxy-, ethyl ester, A., II, 125. p-Tolylsulphamic acid, sodium salt, A., II, 158.

o-Tolyl-p-tolylazoxysulphone, A., II, 331. p-Tolyltrimethylammonium chechloride, p-amino-, A., II, 46. chloride hvdro-

Tomatoes, diseased and healthy, protein in, A., III, 314.

growth of, effect of sodium salts on, A., III, 514.

growth and vitamin content of, effect of nutrient deficiencies on, A., III, 623.

normal and parthenocarpic constituents of, A., III, 783.

in relation to setting and size, A., III, 86. ripening of, energy expended in, A., III, 308. Tomato plants, constituents of, in relation to fruiting and nutrition, A., III, 623.

defoliation of, due to emanations from ripe fruit, A., III, 781.

determination in, of pyridoxine, with Neurospora sitophila, A., III, 232; C., 41. effect on, of platinic chloride, A., III, 781.

of poliomyelitis virus, A., III, 443. growth of, and ascorbic acid content, effect of

potassium iodide on, A., III, 229. effect of root system on, A., III, 382 in nutrient solutions, effect of aeration on,

A., III, 307. hybrid, roots, excised, culture of, A., III, 854.

pigments of, in fruit and leaves, A., III, 229. roots, effect on, of β -(4-methylthiazolyI-5)alanine, A., III, 87.

Tomato plants, roots, excised, gall formation in, A., III, 855.

growth of, and heterosis, A., III, 854. pyridoxine specificity for, A., III, 854. glycine in nutrition of, A., III, 310. isolated, nutrition of, A., III, 155.

seeds, effect of X-rays on seedling growth from, A., III, 380.

Tomato virus, bushy stunt, liberation of, from infected leaf residues, A., III, 707.

Tongue, actinomycosis of. See Actinomycosis.

Tonometry, technique of, and care of tonometers, A., III, 334.

Tonsillitis, and complications, treatment of, with sulphonamides, A., III, 205.

prevention and treatment of, with sulphanilamide, A., III, 55.

Topaz, constitution and synthesis of, A., I, 110. U.S.S.R., rare elements in, A., I, 48.

Torbanite, Glen Davis, thermochemistry of, A., I. 48.

Torch, micro-, C., 146.

Toredo navalis, sexual cycle in, A., III, 260. Torula cremoris, vitamin requirement of, A., III, 143.

Torula rubra, carotene pigment from, A., III, .369.

Torula utilis, biochemistry of, A., III, 614. Torularhodin, A., III, 369.

Touch, perception of, effect of age in, A., III, 533.

threshold value of, at Jungfraujoch and Lauterbrunnen, A., III, 178.

Tourniquets, venous, effect of, on blood-sugar values, A., III, 12.

Toxicity constants, calculation of, A., I, 687. Toxicology, data of, statistical treatment of, A.,

Toxins, association of, with agents of lymphogranuloma-psittacosis group, A., III, 777. bacterial, action on, of metals, A., III, 614. on tumours, A., III, 350.

of lymphogranuloma-psittacosis group agents, action of sulphamerazine on, A., III, 551.

Toxoplasma in infections of animals, A., III, 505. Toxoplasmosis in mice, A., III, 143.

Trace elements, detection of, by spot reactions, C., 109.

Trachoma, susceptibility to, of monkeys, A., III, 649.

Tradescantia occidentalis, mitosis in pollen tube of, effect of colchicine and sulphanilamide on, A., III, 381.

effect of drugs, hormones, etc., on, A., III, 313.

Trametes suavolens, metabolic products of, A., III, 692.

Transamination, A., III, 356.

by means of deuterium, A., III, 286. effect on, of nuclear-substituted a-amino-aphenylacetic acids, A., II, 161.

Transpiration. See under Plants and Trees. Transport numbers, determination of, by moving boundary, A., I, 18.

Trauma, biochemical findings in normal and trauma-resistant rats after, A., III, 328. cerebral, A., III, 331.

fluid balance problems in, A., III, 17.

See also Wounds.

Trees, American, thiamin in, A., III, 316. forest, pollen, storage and germination of, A., III, 383.

transpiration of, during dormancy, A., III, 439.

voltage gradients in, A., III, 84. growth of, effect of light on, A., III, 515.

seeds, proteins of, A., III, 708. susceptibility of, to insects, indicated by voltage gradients, A., III, 515.

Trehalose, isolation of, from desert manna, A., III, 746. oxidation of, with lead tetra-acetate in glacial

acetic acid, A., II, 7. $\beta\beta$ -Trehalose, octaacetate, A., II, 214. aa- and β8-Trehaloses, p-benzeneazobenzoates,

A., II, 6.

Treponema pallidum, electron microscopy of, A., III, 294. infections by, action of penicillin on, A., III, 606.

viability of, in stored plasma, A., III, 70. Treponema recurrentis, infections with, action of sulphonamides against, A., III, 680.

Triacetonamine, nitroso-, dissociation constant of, A., I, 224.

s-Triacetone dialcohol, and its dehydration products, A., II, 360. Triacetyl-N-acetylchondrosamine monohydrate,

A., II, 249. Triacetylbenzene, tribromo-, reaction of, with

dithioamides, A., II, 382. Triacetylcholic acid, methyl ester, A., II, 264.

2:4:6-Triacetylresorcinol, A., II, 191. 4-Triacetyl-d-xylosidamino-2-methylthio-

pyrimidine, 6-amino-, 6-acetyl derivative, A., II, 59.

Triacontanoic acid, preparation of, A., I, 104. Trialkyl phosphites, isomerisation of, A., II, 179. 2:4:6-Trialkylresorcinols, syntheses of,

products of the Nidhone process, A., II, 191. Trî-m-anisylmethyl chloride, A., II, 218. 2:4:6-Tri-p-anisyl-4-methyl-2-ethyl-1:3-

dithiacyclohexane, A., 11, 305. αβγ-Tri-p-anisylpropane, A., II, 12.

Tri-p-anisyltriboron nitride, trichloro-, A., II, 148.

Trianthema portulacastrum, constituents of, and

of Boerhaavia diffusa, A., II, 207. Triaryl compounds, quincidation of, A., II, 258. Triazolium salts, A., II, 112.

1:2:3:4:5:6-Tribenz-41:3:5:7-cyclooctatetraene, and its 7:8-dibromide, A., II, 126.

spectrum of, absorption, and structure, A., II, 126.

1:2:3:4:5:6-Tribenzcyclooctatetraene-7:8dicarboxylic anhydride, A., II, 126. Tribenzoyl-1:12-benzperylene-Bz1:Bz2-

dicarboxylic anhydride, A., II, 95. Tribenzyldimethylsulphonium chloride dibismuth chloride, A., II, 2.

3:4:5-Tribenzyloxybenzoyl chloride, A., II, 101. p-3':4':5'-Tribenzyloxybenzoyloxybenzoic acid, benzyl ester, A., II, 101.

2-3':4':5'-Tribenzyloxybenzoyloxyquinoline, A., II, 378.

2-3':4':5'-Tribenzyloxybenzoylpyridine, A., II, 378.

Tributylamine, additive compound of, with sulphur dioxide, molecular surface energy of, A., I, 119.

4:3':5'-Tricarbethoxy-1:3:5:1':4'-pentamethyldipyrrylmethyl bromide, A., II, 276.

4:3':5'-Tricarbethoxy-1:3:5:1':4'-pentamethyldipyrrylmethylcarbinol, and its methyl ether, A., II, 276.

Trichinella, antigen, skin tests with, in hospitals and sanatoria, A., III, 703.

Trichinella spiralis, antibodies to, electrophoresis of, A., III, 80. antigenic analysis of, A., III, 80.

infections with, blood-histamine detection in,

in guinea-pigs and rats, A., III, 428. metabolism of rats during, A., III, 274. Trichinosis, parathyroids in, A., III, 465.

pathology of, A., III, 513.

Trichocephalus, invasion of, response of nervous

apparatus of sheep to, A., III, 247. Trichomonas fætus, reactions to, in cattle, A., III, 842.

Trichomonas hominis, morphology of, in man and animals, A., III, 842.

Trichomonas intestinalis, vaginal implants with, A., III, 504.

Trichomonas vaginalis, infestation by, chemotherapy of, A., III, 434.

vaginal implants with, A., III, 504. Trichophyton discoides, growth of, effect on, of Actinomyces albus and of thiamin, A., III,

291. vitamin deficiencies of, A., III, 291. Trichosurus vulpecula, pouch of, effect of

chorionic gonadotropin on, A., III, 111. pouch and scrotum in, functional relations between, A., III, 809.

Tricosanonitrile, A., II, 122.

Tri-o-cresyl phosphate, poisoning by. under Poisoning. See

skin absorption of, A., III, 281.

Tricrotonylidenetetramine-a, N-trichloro-and -trinitro-derivatives of, A., II, 380, 381. Tricrotonylidenetetramine-b, and its N-trichloro-

and trinitro-derivatives, A., II, 380. Tricrotonylidenetetramines, constitution of, A., II, 381.

derivatives and salts of, A., II, 380.

Tricyclenone, and its semicarbazone, A., II, 142. $\Delta^{e\theta}$ -n-Tridecadi-inene, A., II, 30.

n-Tridecane- $\zeta\theta$ -dione, A., II, 322. Tridodecylarsine, A., II, 66.

Triethylamine, β -hydroxy- $\beta'\beta''$ -dicyano-, and its picrate, A., II, 201.

Triethylene glycol, inflammability of, A., III, 557.

vapour, effect of, on bacteria and influenza virus, A., III, 71.

2:4:6-Triethylresorcinol, A., II, 191.

Trifolium repens, cyanogenesis in, A., III, 154. cyanogenetic glucoside and its enzyme in, A., III, 229.

seed, germination of, A., III, 780.

Triformylcholic acid, methyl ester, A., II, 264. Triglycerides, digestibility of, A., III, 42. disaturated, s-oleyl, polymorphism of, A., II, 287.

hydrolysis of, by pancreatic lipase, A., III, 284, 766.

unsaturated, A., II, 211. unsymmetrical, mono-oleo-disaturated and dioleo-monosaturated, A., II, 120.

Trigonelline, cleavage of, A., II, 383. NNN-Tri-n-hexylhydrazinium chloride, A., II, 184.

Tricycloionol, and its acetate, A., II, 263. Tricycloionone, and its derivatives, A., II, 263. Triketodihydrolanosteryl acetate, A., II, 269.

Triketohydrindene, photochemical reduction of, A., II, 340.

2:3:6-Triketo-1-methylindolo-1':2'-4:5tetrahydropyrazine, A., II, 311.

1:3:4-Triketo-9-methyl-46-octahydronaphthalene, preparation of, A., II, 138.

1:3:4-Triketo-2-methyltetrahydropyrazine-See 2:3:6-Triketo-I-methyl-[1,2a]indole. indolo-1':2'-4:5-tetrahydropyrazine.

Triketones, alicyclic, spectra of, absorption, ultra-violet, A., 11, 138.

Trilaurin, polymorphism of, A., I, 80. Trilene. See Ethylene, trichloro.

Trimethin[2-(3-ethyldihydrobenzbenzoxazole)]-[2-(perinaphtha-1:3-thiazines)], A., II, 26.

Trimethin[2-(3-ethyldihydrobenzbenzthiazole)]-[2-(per:naphtha-1:3-thiazines)], A., II, 26. Trimethin[2-(3-ethyldihydrobenzoxazole)]-

[2-(permaphtha-1:3-thiazine)], and its hydrochloride, A., II, 26.

Trimethin[2-(3-ethyldihydrobenzthiazole)] [2-(permaphtha-1:3-thiazine)], A., II, 26. 3:4:5-Trimethoxybenzaldehyde, and its deriv-

atives, A., II, 314. 3:4:5-Trimethoxybenzanilide, A., II, 314.

2:3:6-Trimethoxybenzene, 1-iodo-, and 1-iodo-5-nitro-, A., II, 333.

3:4:5-Trimethoxybenzhydrazide, benzenesulphonyl derivative, A., II, 315.

2:3:6-Trimethoxybenzoic acid, ethyl and methyl esters, A., II, 333.

1-(3':4':5'-Trimethoxybenzoyl)-1:2-dihydroquinaldinonitrile, and 1-2'-nitro-, A., II, 315.

3:4:5-Trimethoxybenzyl alcohol, 3:5-dinitro-benzoate, A., II, 314. 3:4:5-Trimethoxybenzyl chloride, A., II, 314.

a-2:3:4-Trimethoxybenzyl-n-butyric acid, A., II, 227.

3:4:5-Trimethoxybenzylmalonic acid, and its ethyl ester, A., II, 314. β-2:3:4-Trimethoxybenzyl-n-valeric acid, A., II,

2:3:4-Trimethoxy-a-ethylcinnamic acid, A., II,

2:3:4'-Trimethoxyflavanone, A., II, 110.

6:7:8-Trimethoxy-3-(m-methoxyphenyl)carbostyryl, A., II, 315.

cis- and trans-3:4:5-Trimethoxy-a-m-methoxyphenylcinnamic acids, 2-amino-, and 2-nitro-, A., II, 315.

 β -3:4:5-Trimethoxyphenylethylamine, derivatives of, A., II, 48.

 β -3:4:5-Trimethoxyphenylpropionic acid, A., II, 314.

Trimethyl phosphate, equilibrium of, with acetic acid, A., I, 127.

use of, as a methylating agent, A., II, 210. Trimethylacetic acid, A., II, 92.

3:3:6-Trimethyl-2-allylidenecoumarone, A., II,

Trimethylamine, additive compounds of, with boron fluoride and its methyl derivatives, A., I, 44.

entropy, heat constants, and vapour pressure of, A., I, 274.

formation of, from choline, A., III, 699. oxide, reaction of, with sulphur dioxide, A., I, 16.

reduction of, by bacteria, A., III, 146, 616.

reaction of, with sulphur dioxide, A., I, 16. viscosity of, A., I, 149.

Trimethylaminomethane, trthydroxy-derivatives of, A., II, 323.

 $a\beta\delta$ -Trimethyl-d-araboascorbic acid, A., II, 213. 1:2:3-Trimethylbenzene, 4-amino-, and its acetyl derivative, A., II, 157.

2:4:6-Trimethylbenzene-1-sulphonxanthylamide, A., II, 156.

3:4:6-Trimethylbenzoic acid, 2-hydroxy-, A., II,

2':4':6'-Trimethylbenzophenone, 3:5-dichloro-4hydroxy-, A., II, 128.

3:4:5-Trimethylbenzophenone, semicarbazone. A., II, 223.

2:4:8-Trimethyl-6:7-benzquinoline,

hydrochloride and picrate, A., II, 235. 5-3':4':6'-Trimethyl-2':5'-benzquinon-1'ylmethyl-2:3-dimethyl-5:6-dihydro-pbenzoquinone, 6-hydroxy-, A., II, 376.

2:4:5-Trimethylbenzyl chloride, A., II, 199. 2':4':5'-Trimethylbenzyl-2:3-dimethyl-5:6dihydro-p-benzoquinone, 6-hydroxy-5-3':6'dihydroxy-, A., II, 376.

N-2:4:6-Trimethylbenzylethylenediamine, A., II, 366.

3:5:4'-Trimethyl-5'-bromodi-2-pyrrylmethene-4:3'-dicarboxylic acid, diethyl ester, hydrobromide, A., II, 350.

3:5:6-Trimethyl-1-a-bromossopropylcoumaran, 1- and 4-bromo-, A., II, 54.

2:5:7-Trimethylchromone, 6-chloro-, and its 2-styryl compound, A., II, 303.

3:5:6-Trimethylcoumaran-1-one, 2-hydroxy-, 2-acetyl derivative, A., II, 54.

3:5:6-Trimethylcoumaran-2-one, its 2:4-dinitrophenylhydrazone, A., II, 54.

4:5:7-Trimethylcoumarin, 6-amino-. and 6-chloro-, A., II, 303.

2:2:6-Trimethyl-2:3-dihydrobenzoic acid, and its p-bromobenzoylmethyl ester, A., II, 196, 197.

4:7:5'-Trimethyl- Δ^2' -dihydrofurano-2':3'-5:6coumarin, A., II, 270.

4:4:6-Trimethyl-1:3-dioxan, 5-hydroxy- ω -4:4:6trahydroxy-, and its tetra-acetate, A., II, 119.

2:5:4'-Trimethyldi-2-pyrrylmethene-4:5'-dicarboxylic acid, 3'-bromo-, ethyl ester of, A., II, 351.

3:5:3'-Trimethyldi-2-pyrrylmethene-4:4'dicarboxylic acid, 5'-bromo-, diethyl ester, A., II, 351.

 $\gamma\eta\lambda$ -Trimethyl- Δ^a -dodecen- γ -ol, A., II, 31. $\gamma\eta\lambda$ -Trimethyl- $\Delta\beta$ -dodecenyl bromide, A., II, 31. γηλ-Trimethyl-Δα-dodecinen-γ-ol, A., II, 31.

Trimethyl-n-dodecylammonium chloride, A., II, 4:5-Trimethylene-3-benzyl-3-methyl-2-

pyrrolidone, A., II, 272. 4:5-Trimethylene-3:3-dimethyl-2-pyrrolidone, A., II, 272.

5:6-Trimethylenehydrindene, A., II, 329. Trimethylene-D-mannitol, acetolysis of, A., II, 118.

αγ-βε-δζ-Trimethylene-D-mannitol, A., II, 118.

4:5-Trimethylene-3-methyl-3-ethyl-2pyrrolidone, A., II, 272.

Trimethylenepyrroles, synthesis of, A., II, 271. Trimethylene-D-sorbitol, acetolysis of, A., II,

Trimethylethylene dibromide. See isoPentane, βy-dibromo-.

2:3:4-Trimethyl-a-1-fucose, and its hydrate, A., II, 153. 2:3:4-Trimethyl-a-d-fucose monohydrate, A.,

II, 153. Trimethylgallazide, reaction of, with cresols,

A., II, 336. 3:4:5-Trimethylgallic acid, anisyl and tolyl

esters, A., II, 336. $\gamma\gamma\zeta$ -Trimethyl- $\Delta\alpha\epsilon$ -n-heptadiene, A., II, 209.

 $B\epsilon\epsilon$ -Trimethyl-n-heptane, A., II, 209. βδδ-Trimethyl-Δas-n-hexadiene, A., II, 209

1:2:2-Trimethylcyclohexane-3-carboxylic and its methyl and p-phenylphenacyl esters, A., II, 107.

2:3:5-Trimethylcyclohexanol, and its a-naphthylurethane, A., II, 160.

2:4:6-Trimethylcyclohexanol, and its a-naphthylurethane, A., II, 160.

dl-2:2:3-Trimethylcyclohexan-4-one-1carboxylic acid, and its derivatives, A., II,

107. 2:3:3-Trimethylcyclohexan-1-one-4:6dicarboxylic acid, diethyl ester, A., II, 107.

 $\alpha\beta\delta$ -Trimethyl-n-hexenoic acid, A., II, 325.

 $\alpha\beta\delta$ -Trimethyl- $\Delta\beta$ -n-hexenoic acid, a-cyano-, ethyl ester, A., II, 325. $\alpha\beta\delta$ -Trimethyl-n-hexenonitrile, A., II, 325.

δ-2:6:6-Trimethyl-4 and -42-cyclohexenyl-βmethyl-Δαγ-pentadienonitriles, A., II, 262.

 δ -2:6:6-Trimethyl- Δ^2 -cyclohexenyl- β -methyl- Δ^{α} pentenoic acid, a-cyano-, methyl ester, A., II, 262.

 $\beta \zeta k$ -Trimethyl- ι -hydroxymethyl- $\Delta \beta \zeta$ undecadien-k-ol, A., II, 150.

 $\beta \zeta \kappa$ -Trimethyl- ι -hydroxymethyl- $\Delta \beta \zeta \kappa$ undecatriene, A., II, 150.

αβγ-Trimethylmannonamide, A., II, 212. αβγ-Trimethylmannonolactone, A., II, 212.

Trimethylmannosaccharic acid, diamide, A., II,

1:2:5-Trimethyl-3-methoxybenzene, 6-amino-, and its hydrochloride, and 6-formyl derivative, and 6-nitro-, A., II, 45.

1:2:9-Trimethyl-10-methoxymethylanthracene, and its s-trinitrobenzene derivative, A., II, 2:3:4-Trimethyl-a-methyl-1-fucoside, A., II, 152.

2:3:4-Trimethyl-\(\theta\)-methyl-1-fucoside, A., II, 152. 1:2:5-Trimethylnaphthalene, 3-hydroxy-, A., II, 44.

2:3:5-Trimethylnaphthalene, from coal tar, A., II, 93.

2:3:5-Trimethyl-1:4-naphthaquinone, A., II, 93. 3:5:5-Trimethyloxazolidine-2:4-dione, A., 382.

(-)-ζκξ-Trimethylpentadecan-β-one, and semicarbazone, A., II, 31.

-)-ζκξ-Trimethyl-Δ'e-pentadecen-β-one, A., II,

1:1:3-Trimethylcyclopentane, A., II, 357.

 $a\beta\beta$ -Trimethylpentane- $a\gamma\epsilon$ -tricarboxylic acid, triethyl ester, A., II, 107. 2:4-dinitro-2:4:4-Trimethylcyclopentanone,

phenylhydrazone, A., II, 136. $\beta\gamma\gamma$ -Trimethyl- Δ^{α} -pentenoic acid, A., II, 289.

1:2:6-Trimethylphenanthraquinone, and quinoxaline, A., II, 44. 1:2:6-Trimethylphenanthrene, and its picrate,

A., II, 44.

2:3:6-Trimethylphenol, 4-thiol-, A., II, 271. 3:4:5-Trimethylphenol, A., II, 98.

a-2:4:5-Trimethylphenyl-n-butan-α-ol-γ-one, A., II, 199.

a-2:4:5-Trimethylphenyl-4a-buten-y-one, its semicarbazone, A., II, 199.

 β -2:4:5-Trimethylphenylethyl methyl ketone, A., II, 199. β -2:4:5-Trimethylphenylethyl methyl ketone,

β-3:6-dinitro-, A., II, 199. δ -2:4:5-Trimethylphenyl- β -methyl-n-butan- β -ol,

and its dinitrobenzoate, A., II, 199.

- 3:5:6-Trimethyl-1-n-propylcoumaran, A., II, 3:5:6-Trimethyl-1-isopropylcoumaran, A., II, 54. 3:3:6-Trimethyl-2-propylcoumarone, A., II, 302. 3:5:6-Trimethyl-1-n-propylcoumarone, 4-hydroxy-, A., II, 54. 3:5:6-Trimethyl-1-isopropylidenecoumaran-2one, A., II, 54. 2:4:6-Trimethylpyridine, action of, on carcinoma and lymphosarcoma tissue cultures, A., III, 747 1:2:4-Trimethylpyrrole-3:5-dicarboxylic 5-ethyl-3-methyl ester, A., II, 351.
- Trimethylsilane, A., II, 316. Trimethylsulphonium chloride bismuth chloride, A., II, 2. 2:6:6-Trimethyl-42-tetrahydrobenzoic 3-bromo-, A., II, 196.
- 3-hydroxy-, and its methyl ester, A., II, 196. 3:5:5-Trimethylthiazolidine-2:4-dione, A., II, d-δ θ μ -Trimethyltridecoic acid, p-bromophenacyl
- ester and p-xenylamide, A., II, 376. 5:7:8-Trimethyl-2- $\delta\theta\mu$ -trimethyltridecylthiochroman, 6-hydroxy-, A., II, 271.
- βγγ-Trimethyl-n-valeric β-hydroxy-, acid, dehydration of, A., II, 289. Trimming board, cork-paraffin, for tissues, C.,
- 141. Trinorlanosteric acid, and its methyl ester, A., II,
- 269.(-)-Tri-β-octyl phosphite, A., II, 150.
- Tri-n-octylamine, A., II, 34. Trioses, equilibrium of, with sugars, A., II, 361. Tricyclopentyl, A., II, 187.
- TricyclopentyI, 3-bromo-, A., II, 187. Δ^2 -Tricyclopentylene. See $3-\Delta^{2\sigma}$ -cycloPentenyldicuclonentyl. Triphenyl antimony dichloride and dihydroxide,
- configurations of, A., I, 192. bismuth dichloride and dinitrate, configurations of, A., I, 192.
- phosphate, tri-2:4:6-trichloro-, A., II, 159. 2:2'-4-Triphenyl-4'-p-anisylazadipyrromethine, A., II, 81.
- 2:2':4-Triphenyl-4'-p-anisyldipyrromethine, A. II. 81.
- Triphenylarsine, hydroxide and oxide, dipole moments of, A., I, 193.
- N-Triphenylarsinecarbamic acid, methyl ester At, II, 365. $aa\beta$ -Triphenylbutane, A., II, 129.
- ayδ-Triphenyl-n-butane, ay-di-p-hydroxy-, A.,
- aaβ-Triphenylbutyl alcohol, A., II, 129.
- aaβ-Triphenyl-Δα-butylene, A., II, 129. γγγ-Triphenyl-n-butyric acid, and its p-bromo-
- phenacyl ester, A., II, 99. Triphenylcarbinol, tri-m-fluoro-, A., II, 329. 1:2:5-Triphenyl-3:4-di-p-bromophenyl- $\Delta^{2:4}$ -
- cyclopentadienol, A., II, 163. 2:3:5-Triphenyl-3:4-di-p-bromophenyl- Δ^4 cyclopentenone, and its 2:4-dinitrophenyl-hydrazone, A., II, 163.
- 1:2:5-Triphenyl-3:4-diphenylenepyrrole, A., II,
- Triphenyl-p-diphenylylmethane, 4:4'-dihydroxy-, and its diacetate, A., II, 258.

 Triphenylethylene, distribution of, in estrogen-
- induced mammary cancer, A., III, 195. α - $\beta'\beta'\beta'$ -Triphenylethylglutaric acid, and
- bis-S-benzylthiuronium salt, A., II, 99. NN'N"-Triphenyl-N-ethylguanidine, its hydrochloride, A., II, 191.
- 2:4:5-Triphenylfuran-3-carboxylic acid, and its methyl ester, A., II, 66.
- Triphenylmethane dyes, between relation dipyrrylmethane dyes and, A., II, 276. Triphenylmethyl bromide and chloride, crystals,
- X-ray structure of, A., I, 270. chloride, tri-m-chloro-, and tri-m-fluoro-, A., II, 329.
- m-nitro-, A., II, 253. β -Triphenylmethyl-n-butyric acid, its p-bromophenacyl ester, A., II, 99.
- β-Triphenylmethylcrotonic acid, and its esters, A., II, 133.

- ϵ -Triphenylmethyl- $a\beta$ -dimethyl-d-araboascorbic
- acid, A., II, 213.

 NN'N"-Triphenyl-N-methylguanidine, and its
- hydrochloride, A., II, 191. y-Triphenylmethyl-4a-n-pentenoic acid, and its methyl ester, A., II, 133.
- ϵ -Triphenylmethyl- $a\beta\delta$ -trimethyl-daraboascorbic acid, A., II, 213. 6-Triphenylmethyl-2:3:4-trimethyl-a-
- methylmannoside, A., II, 212. Triphenylphosphine, hydroxide, oxide, selenide, and sulphide, dipole moments of, A., I, 192,
- αβγ-Triphenyl-n-propane, αγ-di-p-hydroxy-, A., II, 13.
- γγγ-Triphenyl-n-propyl alcohol, A., II, 99. 3:4:6-Triphenylpyridine-2-carboxylic acid, and its methyl ester, A., II, 66.
- 1:3:5-Tri-(4-phenyl-2-thiazolyl)benzene, A., II, 382.
- aaa-Triphenyl- δ -triphenylmethyl- Δ^{γ} -n-hexen- β one, A., II, 133.
- Triphosphatase, plant and tumour, hydrolysis by, of triphosphates, A., III, 841.
- Triphosphates. See under Phosphorus.
- Tripicolinato-iron, A., II, 111.
- Triplopia, binocular, visual phenomenon related to, A., III, 183.
- Tripolyphosphates. See under Phosphorus. 2:4:6-Trisopropylacetophenone, A., II, 136.
- 2:4:6-Trisopropylacetophenone, 3:5-dinitro-, A., II. 310.
- Tripropylamine, additive compound of, with sulphur dioxide, molecular surface energy of, A., I, 119.
- 2:4:5-Triisopropylbenzamide, A., II, 133. 2:4:6-Trisopropylbenzamide, A., II, 133.
- 1:2:4-Tritsopropylbenzene, 5-bromo-, A., II, 133.
- 1:2:4-Triisopropylbenzene-A, 5-amino-, and its derivatives, and 5-nitro-, A., II, 157.
- 1:2:4-Tritsopropylbenzene-B, 5-mitro-, A., II, 157.
- 1:3:5-Triisopropylbenzene, 2-amino-, 2:4-diamino-, 2-nitro-, 2:4:6-trinitro-, and 4-nitro-2-amino-, and their derivatives, A., II, 155.
- 1:3:5-Triisopropylbenzene-2-sulphonamide, 4-nitro-, A., II, 155.
- Triisopropylbenzenesulphonamides, A., II, 155. 1:3:5-Tritsopropylbenzene-2-sulphonanilide, 4-nitro-, A., II, 155.
- Trissopropylbenzenesulphonanilides, A., II, 155. 1:2:4-Tritsopropylbenzene-5-sulphonyl chloride, A., II, 155.
- 1:3:5-Triisopropylbenzene-2-sulphonyl chloride, A., II, 155.
- 1:3:5-Trissopropylbenzene-2-sulphonyl chloride, 4-nitro-, and its amide and anilide, A., II, 155.
- 2:4:5-Triisopropylbenzoic acid, A., II, 133. 2:4:6-Triisopropylhenzoic acid, A., II, 133.
- 2:4:5-Triisopropylbenzonitrile, A., II, 133. 2:4:6-Trizsopropylbenzonitrile, A., II, 133.
- 2:4:6-Triisopropylbenzyl cyanide, A., II, 334.
- 2:4:6-Tritsopropylmandelic acid, and its derivatives, A., II, 334.
- 2:4:6-Triisopropyl-1-phenylacetamide, A., II,
- 2:4:6-Tritsopropyl-1-phenylacetic acid, A., II, 334.
- 2:4:6-Tritsopropylphenylglyoxal, and its derivatives, A., II, 310.
- 2:4:6-Triisopropylphenylglyoxylic acid, A., II, 136.
- 2:4:6-Triisopropylphenylglyoxylic acid, 3:5-dinitro-, A., II, 310.
- Tri-2-pyridylarsine, A., II, 283. Tri-2-pyridylphosphine, A., II, 283.
- Trisnicotinylacetone chromic chloride, A., II, 377. Tristrimethylsulphonium chloride dibismuth chloride, A., II, 2.
- Tri- $(\beta$ -sulphanilamidoethyl)amine, and triacetyl derivative, A., II, 74.
- αβγ-Tri(sulphanilamido) propane, and its triacetyl derivative, A., II, 75.
- Triterpenes, A., II, 44, 108, 165, 269, 375. Triterpene group, A., II, 22.
- Triterpene resinols, A., II, 53, 109, 231. Triterpene series, A., II, 270.

- Triterpenediols, A., III, 624.
- Triterpenoids, structure of, A., II, 375.
- Tritetradecylarsine, A., II, 66. Trithymoxysilan, chloro-, A., II, 191.
- Triticum timopheevi x turgidum, amphidiploids of, colchicine-induced, A., III, 85. Tri-m-tolyl phosphate, and tri-6-bromo-, A., II,
- 159. Tri-p-tolyl phosphate, tri-3:5-dibromo-, A., II,
- 159. Tri-p-tolylstibine oxide, dipole moment of, A., I, 193.
- Triton taniatus, cleavage and low temperature in, A., III, 348.
- triploidy in, A., III, 347. Triturus pyrrhogaster, sex differentiation in, A., III, 388.
- Triturus viridescens, development of, effects of pentaploidy on, A., III, 160.
 - eyes of, lens regeneration from dorsal iris in,
 - A., III, 182. transplanted, return of vision in, after
 - refrigeration, A., III, 182. haploidy and triploidy in, induced by egg
 - refrigeration, A., III, 160. larvæ, chromosome number of, spontaneous
- aberrations of, A., III, 388.
- Triuret, properties of, A., II, 71. Tropæolum majus, respiration in, A., III, 622. Tropic acid, aminoalkyl and dialkylaminoalkyl
- esters, salts of, A., II, 46. Trout, brown. See Salmo fario.
- Trouton's rule, derivation of, A., I, 79.
- Truxillic acids, A., II, 296.
- ζ-Truxinamic acids, rearrangement of, A., II, 209.
- Trypan-blue, effect of, on mouse liver, cytology of, A., III, 521.
- storage of, in internal ear of rats, A., III, 450. Trypanosoma, cultures, viability of, A., III, 294. Trypanosoma congolense, infections by, thera-
- peutic actions of compounds on, in mice, A., III, 552. treatment of, with 4:4'-diamidinodimethyl
 - stilbene in cattle, A., III, 552. with phenanthridinium compound in
- Zebu cattle, A., III, 211. Trypanosoma cruzi, biochemistry, culture, and
- growth requirements of, A., III, 434. biology of, A., III, 504.
- culture of, medium for, A., III, 560. infection by, and reticulo-endothelial blockage, A., III, 220.
- Trypanosoma duttoni, infection of, protection by sheep serum against, A., III, 70.
- Trypanosoma gambiense, cultivation of, in vitro, A., III, 504.
- Trypanosoma lewisi, infections with, duration of, effect of biotin deficiency on, in rats, A., III, 126.
- Trypanosoma rhodesiense, susceptibility of, to arsenicals, effect of mepacrine treatment on,
- A., III, 552. Trypanosomes, drug resistance of, A., III, 213. Tryparsamide, therapeutic action of, A., III,
- Trypsin, combination of, with potato virus X and tobacco mosaic virus, A., III, 690. plasma coagulation and fibrinogenolysis by,
- A., III, 539. Tryptamine, isolation of, from species of Acacia.
- A., II, 354. Tryptophan, biosynthesis and breakdown of, A.,
- III, 616.
- deficiency of, effect of, on reproduction, A., III, 4Ĭ.
- determination of, in peanut proteins, C., 181. microbiologically, C., 141. oxidation of, A., II, 369.
- rôle of, in blood formation, A., III, 573.
- synthesis of, A., II. 274. by Neurospora, A., III, 142.
- dl-Tryptophan, synthesis of, A., II, 274. l-Tryptophan, metabolism of. See under
- Metabolism. Tsetse fly. See under Flies.
- Tubes, sintered pyrex and soft glass sections in,
- C., 95.

Tuberculin, activity of, in tubercle bacilli cultures, A., III, 77. degradation of, by enzymes, A., III, 700. inhibition by, of cathepsin, A., III, 848. protein, preparation of, A., III, 224. reaction with, after BCG vaccination, A., III, 437. sensitivity to, in hypothermia, A., III, 71. tests with, intra- and trans-dermal, A., III, 775.Tuberculosis, bovine, eradication of, A., III, 437. diagnosis of, laboratory, A., III, 509. effect on, of 4:4'-diammodiphenylsulphone, A., III, 564. of 4:4'-diaminodiphenylsulphone and 2:4'dichlorobenzophenone, A., III, 359. epidemiology of, A., III, 774. erythrocyte sedimentation test in, A., III, 8. hæmagglutination reactions in, A., III, 564. immunity to, during infection, A., III, 700. in London, A., IlI, 301 infection with, in childhood, in relation to adolescents and adults, A., III, 77. ocular, A., III, 649. pulmonary, attack on, A., III, 301. development of, in heart disease, A., III, effect on, of parturition and pregnancy, A., III, 301. human, of bovine origin in Great Britain, A., III, 775. of bovine origin, A., III, 775. serial sedimentin indices in, A., III, 324. reducing substances in skin in, A., III, 564. respiratory, incidence and mortality from, in wartime, A., III, 774. spread of, in wartime, A., III, 77. trichinella skin tests in, A., III, 703. Tuberculostearic acid, structure of, A., II, 319. d-Tubocurarine, A., III, 88. Tubularia, regeneration and respiration rates of, A., III, 660. Tularæmia, virulence of, in animal and arthropod hosts, A., III, 223. Tumours, action on, of bacterial toxins, A., III, alien strain, growth of, in parabiotic mice, A., III, 350. arginase activity of, A., III, 666. ascorbic acid content of, A., III, 416. brain. See under Brain. calcified, A., III, 122. cells, nuclei of, deoxyribonucleic acid content of, A., III, 196. chemically-induced, containing antigen related to that of leukosis sarcoma agent in chicks, A., III, 480. cultivation of, in yolk sac, A., III, 350. development of, d-peptidase in serum in, A., III, 287. diplochromosomes in, in goldfish, A., III, 196. egg-grown, in relation to tissues in chicks, A., III, 665. fowl, transmissible, immunity reactions with, A., III, 747. viability of, on storage at low temperatures, A., III, 598. gastrointestinal tract. See under Gastrointestinal tract. glutamic acid from, A., III, 40. granulosa cell, bilateral, A., III, 822. extraovarian, A., III, 482. intraligamentous, A., III, 482. growth of, effect on, of avidin and egg white feeding, A., III, 543. of exercise, in mice, A., III, 666. of irradiation-killed cells, A., III, 416. of pyridoxine, A., III, 542. of vitamin-C, A., III, 350. growth inhibitors of, test for, A., III, 196. growth mechanisms of, in axolotl, A., III, growth rates of, A., III, 121. hæmorrhage in, immunological protection against, A., III, 350. induced, inheritance of susceptibility to, in

mice, A., Ill, 119.

Tumours, induction of, by 2-amino-Tungsten ores, Darwin Hills, California, A., I, 2-acetamido-fluorence, A., III, 416. by inhalation of radium emanation, A., III, Southern Kiangsi, China, A., I, 258. Tungsten wire, determination in, of thorium, 819. spectrographically, C., 109. by methylcholanthrene, genetics of, A., III, single-crystal, melting of, A., I, 242. 542. Turanose, relationship of, to maltose, A., II, in guinea-pigs, A., III, 661. incidence of, in inbred mice, A., III, Turkeys, reproduction in, effect of artificial light 120. on, A., III, 253. by tobacco tars, A., III, 663. in rats, A., III, 820. Turner's syndrome, œstrogens, A., III, 626. wins, dizygotic, intr with ultra-violet rays, A., III, 122. inhibition of, A., III, 480. Twins, intracranial, cerebrospin during, A., III, 725. Krukenberg, A., III, 123. toxemia recession after, A., III, 812. protein cerebrospinal fluid ovularity of, empirical determination of, by anthropological resemblances, A., III, 389. with appendix involvement, A., III, 417. lymphoid, in mice, treated with steroid Tylose in oak trees, A., III, 316. Tyndall effect, effect of electric field on, A., I, hormones, A., III, 662.
malignant. See Cancer.
mesenchyme. See under Mesenchyme. 246. Typhoid fever, carriers of, treatment of, with sulphaguanidine, A., III, 829. vi agglutinins in tests for, A., III, 77. mouse, cultivated in yolk sac of embryonic chick, A., III, 820. nerve. See under Nerves. immunisation against, A., III, 373. mouse, resistance of mice to, A., III, 77. prognostic classification of, A., III, 700. primary, multiple, in dogs, A., III, 746. treatment of, with sulphapyridine, A., III, reproductive system. See under Reproductive system. with sulphathiazole and immune serum, A. retroperitoneal tissue. See under Tissues. III, 207. spontaneous, course and incidence of, effect of use of synthetic diet for, A., III, 749. temperature on, in mice, A., III, 663. in guinea-pigs, A., III, 119. stomach. See under Stomach. vaccine, renal irritation due to, A., III, 258. Typhoid-paratyphoid fever, vaccine, myelitis in relation to immunisation with, subcutaneous, induced by carcinogenic hydrocarbons, growth and morphology of, in mice, A., III, 121. A., II, 77. Typhus fever, antibodies of, in dried and frozen theca cell, of ovary. See Ovaries, thecoma of. complement, A., III, 512. transparent-chamber technique for, adapted dry blood test for, A., III, 778. to mice, A., III, 121. endemic, in Diego Suarez, Madagascar, A., transplants of, effect of B-vitamins in diet on, III, 79. in Great Britain, A., III, 778. A., III, 268. murine, infection with, in mice, A., III, 512. transplantable, survival of, effect of freezing on, in mice, A., III, 196. treatment of, chemically, A., III, 122, 415, morbidity and mortality of, in mice, A., III, 510. rickettsne of, growth of penicillin, A., III, 566. 666. Walker, growth of, in relation to diminished staining of, A., III, 713. d-amino-acid oxidase activity, A., III, 40. yolk sac-cultivated, effect of, on hæmoglobin treatment of, with Forbisen and toluidineblue, A., III, 607. level in embryonic chick, A., III, 350. Tuna-liver oil, vitamin-D from, effect of, on vaccination against, A., III, 375. metabolism serum-phosphatase of rachitic infants, A., III, Tyramine. Metabolism. Tyres, rubber, synthetic, GR-S, compound evaluation and data on, C., 75. Tundras, Lovozero, age of, A., I, 70. Tung fruit, determination in, of water, C., 73. Tyrocidine, effect of, on mammalian spleen culture, A., III, 210. Tungstates. See under Tungsten. Tungsten, cold-worked, X-ray diffraction by, A., on pathogenic protozoa, A., III, 434. I, 30. Tyroglyphus farinæ, respiration of, A., III, 274. crystals, growth and decay of, A., I, 194. effect of, in rat diet, A., III, 213. Tyrosinase, activation and injury of, by heavy metal salts, A., III, 139. electrical conductivity of, in high electrostatic fields, A., I, 7. activity of, towards phenol, A., III, 764. effect of, on oxidation of β -phenylethylamine derivatives, A., III, 688. electrical and thermal conductivity of, A., I, in parthenogenetic grasshopper eggs, A., III, isotope, radioactive, y-rays from, energy of, A., I, 1. 519.Tyrosinase-catecholase, activity of, measurement optical constants of, A., I, 273. spectrum of, K-adsorption, A., I. 233. arc, A., I, 113. of, A., III, 688; C., 186. Tyrosine, determination of, in peanut proteins, C., 181. ultra-violet, A., I, 25. metabolism of. See under Metabolism. spark, ultra-violet, A., I, 25. Tungsten, cobalt carbides, A., I, 104. oxidation of, A., II, 369. by tyrosinase, in relation to plant respiroxides, A., I, 183. ation, A., III, 764. Tungstates, alkali, preparation of, A., I, reaction of, with iodine, catalysed by acetate 256.and phosphate buffers, A., I. 158. spectra of, Raman, depolarisation in, A., I, synthesis of, A., II, 259. Tyrosine, iodo-, A., II, 369. 267.structure of, A., I, 216. Tungsten detection and determination :diodo-, formation of, by thyroid tissue, effect on, of detection of, C., 111. inhibitors, A., III, 216. of thiouracil, A., III, 587. gravimetrically, with determination of, anti-1:5-di-(p-methoxyphenyl)-1inhibiting effect of inorganic iodide on, hydroxylamino-3-oximino-4-pentene, C., A., III, 728. thyroxine formation from, in vitro, A., III, in arsenic-tin-tungsten ores, C., 64. in ores, C., 12. spectroscopically, C., 110. dl-Tyrosine, 3-amino-, 3-iodo-, and 3-nitro-, A., in rocks, C., 64. II. 369. l-Tyrosine, in steel, C., 12. metabolism Tungsten blue, composition of, A., I, 183. Metabolism.

treatment

intrauterine

with

polio-

of, inhibited by

See

under

of.

cytochrome

of.

See

oxidase

under

of.

death

l-Tyrosine, 3-iodo-, A., II, 369. l(-)-Tyrosine decarboxylase. Decarboxylase. See under methyl Tyrosyltyrosine, ethyl esters. hydrochlorides, A., II, 324. Tyrosyltyrosyltyrosine, and its ethyl ester, hydrochloride, A., II, 324. Tyrosyltyrosyltyrosine, A., II, 324. Tyrothricin, effect of, on mammalian spleen culture, A., III, 210. on staphylococcal toxin, A., III, 76. treatment with, in otolaryngology, A., III, 805. of Clostridium welchii infection, A., III, 829.

Udders, goat's, blind halves in, A., III, 411. Ulcers, corneal, A., III, 182. duodenal, treatment of, supra-diaphragmatic section of vagus nerves in, A., III, 113. œsophageal. See under Œsophagus. peptic, after prevertebral ganglia removal in dogs, A., III, 34. bacteriology of, in relation to complications after gastric surgery, A., III, 412. bleeding, in infancy, A., III, 741. death rate from, in Great Britain, A., III, 595. healing of, rôle of epithelisation and contracture in, A., III, 255. in infancy and childhood, A., III, 113. in the Army, A., III, 34. in U.S. Navy, A., III, 34 perforated, shock in, A., III, 346, treatment of, by simple suture, A., III, stomach after operation for, A., III, 814. post-radiation, treatment of, A., III, 284. tropical, causation of, vitamin deficiency in relation to, A., III, 421. varicose, treatment of, with acetylcholine and vitamin- B_1 , A., III, 13. Ulex, alkaloids of, A., III, 568. Ulex gallii, extracts, effect of, on uterus, A., III, Ultracentrifuges, air-driven, installation of, in Pittsburgh University Medical School, C., 95. magnetic support adaptation to, C., 95. recording and controlling system for, C., improved, C., 52. measuring cells and tubes for, C., 52. Ultrafiltration, quantitative, in analysis, C., 53. Ultramicroscope. See under Microscopes. Umbilical cord, blood-carbon dioxide -oxygen content of, in man, A., III, 579. cyclo Undecane, A., II, 253. cycloUndecane, 1:6-diamino-, and its derivatives, A., II, 253.

cycloUndecane-1:6-dione, and its derivatives, A., II, 253. Undecenoic acid, polymerisation of, in presence of boron fluoride, A., II, 287. Undecoic acid, β -hydroxy-, A., II, 151. sec.-Undecyl-n-dodecylmalonic acid. diethyl ester, A., II, 70. Ungulates, brain of. See under Brain. Units, absolute electrical and international, conversion factors for, A., I, 186. Unsaturated compounds, stereoisomerism of, A., aβ-Unsaturated compounds, coupling of, with diazonium salts, A., II, 220. Uracil, detection of, colorimetrically, C., 23. Uræmia, after carbon tetrachloride inhalation, A., III, 610. blood and heart muscle in, cardiotoxic substances in, A., III, 797. potassium intoxication in patients with, A., III, 744. Uraninite, Canadian, extraction of uranium from, A., I, 231. composition of, A., I, 47.

II, 117.

INDEX OF SUBJECTS. Uranium, bombardment of, by neutrons, A., I, disintegration of, A., I, 189. molybdenum isotopes from, A., I, 75. neutron emission from, A., I, 189. products of, A., I, 234. β-rays from isotopes produced by, A., I, 75. strontium and yttrium isotopes from, A., I, 139.extraction of, from pitchblende, A., I, 231. fission of, A., I, 1. fission products of, A., I, 95. isotopes, light, separation of, by thermal diffusion, A., I, 183. magnetic properties of, A., I, 7.
poisoning by. See under Poisoning.
Uranium tetrachloride, magnetic properties of, A., I, 7. pentachloride, stability of, A., I, 45. Uranyl fluoride, spectrum of, fluorescence, A., Peroxyuranates, A., I, 68. Uranium detection, determination, and separation :detection of, in minerals and ores, A., I, 72. determination of, vanadometrically, C., 6. separation of, from copper, C., 105. Urea, bacteriostatic effect of, mixed with sulphonamides, A., III, 145. blood. See under Blood. determination of, with hypobromite, manometrically, C., 140. dietary, effect of, on kidneys and liver of steers, A., III, 352. distribution of, between water of blood cells and plasma, A., III, 325. effect of, on human dental caries, A., III, gonadotropin denaturation by, A., III, 654. synergistic action of, with sulphathiazole, A., III, 436. synthesis of, effect of aneurin on, A., III, 44, 269. See also Carbamide. Urease, action of, inhibition of, by carcinogenic metabolic products, A., III, 498. activity of, in mammals, A., III, 766. inhibition of, by ascorbic acid, A., III, 839. solutions, stable, preparation of, C., 137. Ureters, cystic dilation of, dystokia due to, A., III, 597. transplantation of, into large intestine, A., III, 38. Ureteritis, A., III, 117. Urethane, anæsthetic treatment with, to induce pulmonary tumours, A., III, 416, 662. inhibition by, of enzyme action, A., III, 285. Urethra, position of, restoration and maintenance of, as treatment for urinary incontinence, A., III, 817. Urginea rubella, glycoside from. See Rubellin. Uric acid, determination of, in urine, with uricase, C., 127. in blood in pregnant Bantu women, A., III, 718. Uricase, activation of, by cysteine, A., III, 140. in liver and liver nuclei of rats, A., III, in liver of tumour-bearing rats, A., III, 543. injection of, lowering blood-uric acid by, A., III, 325. Uridylic acid, synthesis of, A., II, 112. Urinary tract, functions of, excretory urography as test of, A., III, 744. infections of, treatment of, with sulphon-amides, A., III, 206. Urine, androgen concentration in, constancy of, A., III, ĭ91. antidiuretic principle excretion in, in renal hypertensive dogs, A., III, 258. casts from, C., 177. cocarboxylase in, A., III, 269.

Urine, crystals in, formed by sulphonamides, A., 111, 258. excretion in, of methæmoglobin-forming substance, A., III, 817. extracts, antigenic properties of, A., III, 439. effect of, on hæmatopoietic system, A., III, 162. fat in, microscopy of, C., 177. follicle-stimulating hormone in, test for, as diagnostic aid, A., III, 538. from rheumatoid patients, effect of injection of, in rats, A.; III, 476. homolysins in, A., III, 540. incontinence of, treatment of, by restoration and maintenance of urethra position, A., III, 817. with estrogens, after menopause, A., III, 538. 17-ketosteroids in, fractionation of, C., 177. lead content of, A., III, 817. nephritic, protein in, chemical and electrophoretic analysis of, A., III, 38. pharmacodynamics of, excreted migraine and its relation to 17-ketosteroid content, A., III, 258. pigments of, in pellagra, etc., A., III, 269. yellow, excretion and metabolism of, A., III, 817. pituitary gonadotropic substances in, precipitation and assay of, A., III, 188. precipitation of reducing substance from, C., pregnancy, cestradiol fraction of, analysis of, A., III, 734. secretion of, after glucose and mercurio chloride administration in dogs, A., III, 135. during dehydration and rehydration, A., III, 659. sodium chloride and other substances excreted in, in diabetes, A., III, 476. Urine analysis :detection in, of proteins, C., 128, 177. determination in, of amino-acids, C., 29, 177. of ammonia, C., 177. of arsenates and arsenites, C., 174. of ascorbic acid, C., 29. of barbiturates, C., 36. of choline, C., 126. of coproporphyrin, C., 79. of demerol, C., 30. of diodrast-iodine, C., 30. of inulin, C., 28. step-photometrically, C., 128. of 17-ketosteroids, C., 78, 127, 177. of N-methylnicotinamide, C., 29. of nicotinamide methochloride, C., 177. of nicotinic acid, C., 29. of oxalic acid, C., 177. of riboflavin, C., 183. of selenium, C., 177. of thiamin, C., 127. of urea, colorimetrically, C., 126. of uric acid, with uricase, C., 127. Urocanic acid, decomposition of, avitaminosis-B1 and, A., III, 45. Urodela, dorsal fin development in, role of neural crest in, A., III, 235. Urogenital system, reaction of, to pregneninolone in salamanders, A., III, 538. Urogenital tract, anomalies in, in twins, A., III, Urolithiasis, vitamin-A deficiency in relation to, A., III, 125. Uronic acids, synthesis of, A., II, 212. Urosalpinx cinerea, proboscis structure and function in, A., III, 234. Urotropin. See Hexamethylenetetramine. Urticaria, treatment of, with histaminase after serum administration, A., III, 704. Uterus, adenocarcinoma and squamous-cell cancer of, A., III, 482. arcuatus and functional malformations of, A., colour produced in, by iodine, A., III, 38. III, 446. concentration of, pituitary injection as test for, A., III, 817. cancer of, A., III, 669. cancer and fibromyomas of, A., III, 417. cortin-like material in, A., III, 535, 730, 731. carcinosarcoma of, A., III, 482. A & C-L*

Uterus, cervix, cancer of, after supravaginal hysterectomy, A., III, 669. in different nationalities, A., III, 822. prevention of, deep cauterisation in, A., III, 821.

treatment of, A., III, 416 lesions of, benign, A., III, 189.

contractions of, in pregnancy, in relation to length of labour, A., III, 469.

effect on, of basergin and orasthin after parturition, A., 111, 60. of pentobarbital sodium; A., III, 811.

of posterior pituitary fractions, in women, A., III, 591.

of progesterone, in guinea-pigs, A., III, 190. fibroids of, corpus luteum and endometrium in patients with, A., III, 810.

gravid, full-term, response of, to pituitrin after alkalinisation, A., III, 733.

priming action of stilbæstrol on, in women, A., III, 409.

hæmorrhage of, dysfunctional, A., III, 467. functional, hemostasis induction and cycle sodium œstrone regulation in, by sulphate, A., III, 32.

induced by progesterone, A., III, 467. with endometrial biopsy, A., III, 812. motility of, at term, in relation to oxytocin

secretion, A., III, 466. inhibitory agents of, A., III, 280. mucosa of, preimplantation changes in, in

cats, A., III, 788. muscle of, hypertrophy of, A., III, 592. myomatous, blood vessels of, A., III, 669. post-partum, treatment of, with ergotamine

and pituitrin, A., III, 429. pregnant, contractile response of, to pituitary

extract, in women, A., III, 409, 733. under spinal anæsthesia, A., III, 408. oxytocin assay on, with Lorand tocograph, A., III, 409.

pressure in, effect on, of ergometrine, oxytocin, and pituitary extract, in pregnant women, A., III, 553.

puerperal, measurement of, daily, statistics of,

A., III, 812. rectum, and vagina, double, A., III, 317. round ligament of, tumours of, A., III, 600. tumours of, mesodermal, A., III, 417, 821. vascular changes in, during pregnancy in rabbits, A., III, 470.

Utriculo-endolymphatic valve, A., III, 1. Uveal tract disease, effect on, of liver therapy, A.,

III, 104. Uveitis, bilateral, with poliosis, and retinal detachment, recovery from, A., III, 248. Uvitinaldehyde, hydroxy., di(propionyl-

hydrazone), A., II, 371.

V Puppis, spectrum of, A., I, 161. Vaccination, accidental, on workers in vaccine lymph manufacture, A., III, 778. BCG, tuberculin reaction after, A., III, 437. compulsory, A., III, 215. encephalomyelitis after, A., III, 374.

with calf lymph and egg vaccine, A., III, 621. Vaccines, immunising power of, adsorbed on aluminium hydroxide, A., III, 376.

T.A.B.C., antigenicity of, mixed with tetanus toxoid, A., III, 78.

veterinary, standardisation of, A., III, 622. Vaccine virus, agglutination by, of red bloodcorpuscles, A., III, 621.

antigenicity and virulence of, effect of radon a-rays on, A., III, 621. inoculation with, lesions from, A., III, 702. properties of, propagated in chorio-allantois of

chick embryos, A., III, 375. resistance to, increased by fluid in tissues, A., III, 152.

strains of, A., III, 226.

transformation of variola virus into, A., III,

ultramicroscopy of, A., III, 438.

Vaccinia virus. See Vaccine virus. Vacua, automatic regulator for, C., 51.

high, seal for, C., 146. Vacuoles, nucleolar, in normal and malignant

fibroblasts, A., III, 350. Vacuum tubes, chemicals and materials used in,

C., 151. Vagina, absence of, congenital, treatment of, with Baldwin technique, A., III, 234. epithelium of, glycogen, intracellular lipin, and mucoid of, in guinea-pigs, A., III, 160.

melanosarcoma of, primary, A., III, 417. prepubertal state of, in girls, A., III, 342. smears, staining of, A., III, 93, 713.

value of, compared with endometrial biopsies, A., III, 467.

Vaginitis, due to Trichomonas, pathology of, A., III, 504.

postmenopausal, treatment of, with diethylstilbæstrol and its dipropionate, A., III,

Vagotomy, bilateral, pulmonary changes due to, in rabbits, A., III, 799.

Vagus, left, neurofibroma of, A., III, 822. reflex activation of, by neosynephrin and pitressin, heart response to, A., III, 636. Valency, A., I, 237.

co-ordination and, A., I, 98. relation of, to electronegativity, A., I, 143. theories of, A., I, 268.

isoValeranilide, a-bromo-N-nitroso-, A., II, 120. Valeric acid, β -hydroxy-, ethyl ester, A., II, 151.

 $\iota so Valeric acid$, $\beta \gamma \cdot d \iota bromo$ -, methyl ester, A., II,

y-Valerolactone, a8-dichloro-, condensation of, with thioamides, A., II, 205.

isoValeronitrile, \(\beta_{\gamma}\)-dibromo-, A., II, 287. O-n- and -iso-Valerylsalicylic acids, methyl esters, A., II, 166.

Valeryltropeine hydrobromide, A., II, 383. Valine, determination of, C., 92.

dl-Valine, p-toluenesulphonyl derivative, A., II, 35.

Vallerite, in ores of Monche-Tundra, A., I, 71. Valves, constant-level float, C., 207. reducing, for compressed gases, C., 56.

Valylvaline, and its benzoyl derivative, from gramicidin hydrolysates, A., II, 35. configuration of, in gramicidin, A., II, 324.

Vanadates. See under Vanadium. Vanadic acid. See under Vanadium.

Vanadium, in ascidians, A., III, 541. isotopes, radioactive, β-ray spectrum from, A., I, 94.

isotope 52, radioactive, energy of γ -rays from, A., I, 210.

period of, A., I, 210. superconductivity of, in critical fields, A., I, 31.

Vanadium alloys with structure of, A., I, 145. aluminium, VAla,

Vanadium chromate, structure of, X-ray, A., I,

peroxides, as intermediates in hydrogen peroxide decomposition, A., I, 108.

Vanadic acid, reaction of, with hydriodic acid, catalysed by oxalate ions, A., I, 20.

Vanadates, determination of, by conductometric titration, C., 15.

Vanadium detection, determination, and separation :-

detection of, in steel, C., 159. determination of, by diphenyl-4-carboxylic

acid, C., 63. in steel, photo-electrically, C., 10.

separation of, from manganese, C., 161. Vanillin, and its derivatives, condensation of, with nitromethane, A., II, 257.

formation of, by enzymes, A., III, 286. $3-\beta-d$ -lactoside, and its hepta-acetate, A., II, 7.

Vanillinearboxylic acid, A., II, 161. Vanillyl allyl ether, 6-bromo-, A., II, 167. Vanillyl- β -d-glucoside, 6-fluoride, its triacetate, A., II, 186.

3:3'-Vanillylidenebis-4-hydroxycoumarin, A., II,

Vapours, inflammable, ignition of, electricspark, apparatus for determining minimum energy of, C., 164.

organic, molecular heat of, A., I, 121.

Vapour pressure, measurement of, slide rule for, C., 52.

of dilute solutions, A., I, 243.

of organic compounds in homologous series, A., I, 148. viscosity and, of dilute solutions, A., I, 275.

Varanus monitor, heart anatomy of, A., III, 785.

Varicella, culture media in, chick membrane as, A., III, 304.

Varicose veins. See und Variola. See Smallpox. See under Veins.

Varnishes, acid values of, determination of, substitute for benzene in, C., 74. detection in, of metallic driers, C., 26. water absorption of, C., 74.

Vascular disease. See under Disease.

Vasoconstriction, substances causing, A., III, 16. Vasodilators, treatment with, of embolism of extremities, A., III, 527. of arterial

Vasopressin, inhibition of, by blood during pregnancy, A., III, 537.

Vasosulpha compounds, A., II, 352; III, 756. Vegetables, dehydrated, analysing conditions in

gas-filled cans for, C., 133. determination in, of water, C., 31.

determination in, of purines, C., 82. frozen, blanching index for, C., 181.

Mexican, vitamin-C content of, A., III, 201.

raw, ascorbic acid content of, effect of mastication on, A., III, 753. respiration of, effect of oxygen concentration

on, A., III, 513. vitamin-P in, stability of, under chemical

treatment, A., III, 604. Veins, cardiac, anterior, drainage of, in relation

to function, A., III, 636.

congestion in, protein content of extra-cellular fluid in, A., III, 525.

leg, venography of, A., III, 14.
pulmonary, absorption of terminations of,
into heart in mammals and man, A., III, 318.

splenoportal obstruction in, without splenomegaly, A., III, 327. varicose, treatment of, failures and recurrences

after, A., III, 722.

Velocity of polymerisation, A., I, 227. Velocity of reaction, coefficients of, from experimental data, A., I, 106. homogeneous, complex, A., I, 203.

in solution, effect of alkyl groups on, A., I, 286.

theory of, A., I, 65. measurement of, by dilatometry, A., I, 19. potentiometrically, C., 161.

unimolecular, equation for, A., I, 179. Vena cava, inferior, ligation of, physiology after, A., III, 98.

superior bilateral, two cases of, A., III, 157. Venereal diseases in Sweden, A., III, 297.

See also Gonorrhœa and Syphilis.

Venesection, treatment with, of polycythemia vera, A., III, 166.

Venipuncture, dummy for teaching, A., III, 172. in presence of cedema, A., III, 172.

Venography, retrograde, of deep leg veins, A., III, 14.

Venoms. See Poisons.

Ventriculin, effect of, on polycythiemia, in relation to choline in stomach, A., III, 321. Venus mercenaria, heart of, as test object for

acetyl choline, A., III, 241. Veratridine, effect of, on eirce anæsthetised dogs, A., III, 554. circulation of

heart-rate-lowering action of, sites of, A., III, 279.

Veratrine, polyploidy induced by, A., III, 854. Veratrine alkaloids, A., II, 206.

correlation of, with Solanum alkaloids, A., II, 65.

Veratrole, antimalarials from, A., II, 23. Veratrole, 4:5-diamino-, 4:5-diacetyl derivative and picrate, A., II, 131.

Veratrole, 3-nitro-4-amino-, 4-acetyl derivative, A., II, 131.

Veratrone, effect of, on urea and urine in pregnancy toxemias, A., III, 659.

 β -Veratroyl- β -benzylidenepropionic acid, A., II,

Veratrum alkaloids, A., III, 554.

Veratrum viride, vasodilating action of, A., III, 279.

Veratryl acetoxymethyl ketone, and its semicarbazone, A., II, 162.

Veratryl bromomethyl ketone, A., II, 162.

Veratryl methyl ketone, A., II, 162.

Veratryl methyl ketone, a-bromo-, a-hydroxy-, and their derivatives, A., II, 162. Verdohæmochromogens, A., III, 323. into azahæmins, transformation of, A., II,

172. Vertebral column. See Spinal column.

Vertebrates, heredity and abnormality development in, A., III, 2.

Vertigo, A., III, 586, 798.

Vesicants, lesions due to, diagnosis and treatment of, A., III, 685.

Vibrios, choleriform, sugar fermentation by, A., III, 296.

Vibrio choleræ, biochemistry of, A., III, 564. growth and properties of, A., III, 775. immunochemistry of, A., III, 700.

Vicia atropurpurea, asparagine and glutamine formation in, A., III, 83.

Vicia faba, seedlings, roots, effect of X-rays on, A., III, 63.

β-Vicianose, heptaacetate, preparation of, A., II, 7.

Villiaumite in welding slag, A., I, 71.

Vinca rosea, diploid and tetraploid, shoot apices of, A., III, 313. pollen grains of, germination of, A., III, 622. polyploidy in, A., III, 313. induced by colchiene, A., III, 231.

Vincent's angina. See under Angina.

Vines, grape, boron nutrition of, A., III, 378. catalase in shoots of, A., III, 64.

dormancy of, and temperature, A., III, 852. Vinethene. See Divinyl ether.

Vinyl alcohols, A., II, 333, 334, 368. Vinyl n-butyl ether, A., II, 90.

isobutyl ether, A., II, 286. compounds, polymerisation rate of, A., I, 20. esters, reduction of, A., II, 246.

ethers, polymerisation of, A., II, 90, 286. halides, spectra of, vibrational, A., I, 191.

polymerides, A., II, 218.

gel formation in, A., I, 15. Vinylacetylene, condensation of, with croton-

aldehyde, A., II, 177.
reactions of, with bromine and chlorine, A., II, 89.

Vinyladipic acid, β - α' -chloro-, at di-p-phenylphenacyl ester, A., II, 154. β-Vinyladipic and

a-Vinyl-α-allyl-Δγ-π-pentenoic acid, A., II, 47. α -Vinyl- α -allyl- Δ^{γ} -n-pentenonitrile, A., II, 47.

p-Vinylbenzyl d-sec. butyl ether, and its polymer, A., II, 218.

Vinyl-n-butylcarbinol oxide, A., II, 374. Vinylisobutylcarbinol, allophanate and oxide of,

A., II, 374.

Vinyl β -chloroisobutyl ketone, A., II, 323.

Vinylethinylcarbinols, halogen derivatives of, A., II, 118.

Vinylethylene, chloro-, polymerisation of, A., I, 287.

Vinylethylene oxide, dichloro-, synthesis and properties of, A., II, 149.

1-Vinyl-A³-cyclohexene, 3-chloro-1-α-chloro-, and its tetrabromide, A., II, 154.

Vinylisopropenylacetylene, condensation of, with o- and p-cresols, A., II, 302. Vinylpyrrochlorin, y-nitro-, methyl ester, A., II.

311. Vipera russellii, venom of, and its antivenene,

reaction between, A., III, 362. Virilism, testosterone-induced, reversible, A.,

III, 254. Virncides, chlorine and ozone, A., III, 79.

hypochlorous acid, A., III, 79. Virulence, epidemic, origin of, A., III, 226. Viruses, A., III, 849.

bacterial, multiplication of, in presence of inorganic salts, A., III, 302.

bodies resembling, ultrafiltration of, A., III,

nervous system, immunological central relationships of, A., III, 775.

field investigations of, tissue cultures for, A., III, 701.

filterable, A., III, 621. growth of, autocatalytic experiment to illustrate, A., I, 133.

neurotropic, infection by, in Chicago, A., III, 564.

plant. See Plant viruses.

pneumotropic, forming elementary bodies, A., III, 777.

reproduction of, A., III, 374. research on, A., III, 302.

titration and neutralisation of, A., III, 438.

Virus diseases. See under Diseases.

Viscera, abnormally arranged, in cats, A., III, 386.

Viscosation, A., I, 84.

Viscosimeters, (P.), C., 144. capillary, C., 52.

for use with fibrocolloids, A., I, 62.

Redwood, use of, C., 94, 144.

Viscosity, constitution and, of micromolecular systems, A., I, 56.

determination of, of viscous liquids, C., 52. electro-, A., I, 126.

in gaseous and liquid states, A., I, 32.

of colloidal suspensions, A., I, 60. of compressed gases, A., I, 149. of dilute solutions, A., I, 243.

of electrolytic solutions in relation to concentration, A., I, 220.

of gases, in relation to temperature, A., I, 169. of liquids, and Raman spectra, A., I, 118. in electric field, A., I, 243.

of macromolecular substances in solution, A., I, 202.

of mixed liquids, law for, A., I, 150.

of unsaturated isocyclic hydrocarbons, A., I,

prediction of, A., I, 274.

vapour pressure and, of dilute solutions, A., I, $\bar{2}75.$

zone theory of, A., I, 20.

Viscous-elastic continua, structural mechanics of, A., I, 14, 56, 57, 202. Viscous liquids. See under Liquids.

Vision, acuity of, at low brightness levels, A., III, 336.

in man, A., III, 183.

lowered, causes of, in senility, A., III, 529. peripheral, A., III, 104.

aeronautical design in relation to, A., III, 403. after-images in, latency and stimulus intensity of, effect of oxygen deprivation on, A., III, 249.

binocular, fixation of, test for, A., III, 802. function of, graphic representation of, A., III, 334.

binocular and uniocular threshold of, A., III,

care of, in manufacturing plants, A., III, 648. colour, blue and yellow visibility in, A., III, 585.

evolution of, A., III, 184. fundamental colour sensations in, in man,

A., III, 25.

in man, A., III, 184. in relation to small objects, A., III, 585.

in ultra-violet rays, apparatus for, C., 99. mental maladjustment and, A., III, 104. short-wave fundamental colour in, deter-

mination of, in man, A., III, 585. tests for, dichotomous, and Farnsworth-

Munsell 100-hue, A., III, 462. testing of, in relation to vitamin-A administration, A., III, 586.

pseudoisochromatic plates for, A., III, 531. trichromatic theory of, development of, A., III, 405.

weakness incidence in, A., III, 531.

Vision, convergence tests for, A., III, 181. defects in, in war production effort, A., III, 332.

defects in fields of, due to hyaline bodies in optic discs, A., III, 804.

defective, in soldiers, causes of, A., III, 648. vocational training programme for cases of,

in Minneapolis public schools, A., III, 103. dichromatic and trichromatic, normal, A., III, 336.

duction power in, nominal and true, A., III, 460.

flicker fusion frequency in, effect vestibular stimulation on, A., III, 104.

flicker reappearance in, at high flash frequency, in cases of brain pathology, A., III, 463.

foveal adaptation in, specification of, A., III, 104.

human, A., III, 184.

in aerial warfare, A., III, 585.

in aviation, A., III, 648.

in relation to military problems, A., III, 403. induced size effect in, theory of, A., III, 726

mechanisms of, A., III, 405, 585.

measurement and theory of, A., III, 183, 651

monocular, bad, simulated, test for, A., III, 648.

night, A., III, 249.

defective, among soldiers, A., III, 336. myopia and presbyopia of, A., III, 463.

phenomenon in, in relation to binocular triplopia, A., III, 183.

photopic, day studies in, A., III, 726.

physiology of, in relation to the cinema, A., III, 181.

processes of, colour photography and, A., III,

red-green discrimination in, judgment test for, A., III, 184.

research on, A., III, 726.

scotopic visibility curve in, A., III, 585. space perception in, A., III, 405, 726.

stereoscopic, magnitude of threshold of, as affected by observation period, A., III, 249. threshold of, effect of supersonic waves on,

A., III, 24. torsion without eye defect in, A., III, 461.

trichromatic, theories of, A., III, 104. See also Eyes, Optics, etc.

Visnagin, constitution of, from Ammi visnaga, A., II, 199.

Visnagone. See 4-Acetyl-3-methoxybenzfuran, 5-hydroxy-. Vitachrome, and its diacetate, A., II, 86.

constitution and synthesis of, A., II, 279. Vital capacity, determination of, height-weight formula for, A., III, 722.

Vitallium tubes, treatment with, of strictured bile ducts, A., III, 257. Vitamins, action of, and their combinations in

rats, A., III, 750. activity and structure of, A., III, 485.

analysis of, C., 35.

glass electrode for titration in, C., 133. as pharmacological agents, A., III, 352. biological action of, A., III, 352.

chemical definition and classification of, A., III, 751.

content of, effect of diet composition on, in

rat tissues, A., III, 268. in bee foods, A., III, 673. in diet of Calcutta families and institutions,

A., III, 266. in honey-bees during life, A., III, 198. curative properties of, in relation to ear, eye,

nose, and throat, A., III, 582. deficiency of, diseases due to, A., III, 464. effect of, on histidine metabolism, A., III,

on cestradiol inactivation by liver, A.,

III, 742. in children, A., III, 486.

in tropical ulcer causation, A., III, 421. subclinical, A., III, 635.

See also Avitaminosis.

332 Vitamins, determination of, C., 29. calibration of fluorimeters used for, C., yeast growth method for, C., 84. equilibrium of, with antivitamins, A., III, 764. fat-soluble, effect of, on growth, A., III, 824. foods and, A., III, 198, 352. hormones and, synthetic, evaluation of, A., III, 198. in African foods, C., 183. in dehydrated seeds and sprouts, A., III, 43. in medical practice, A., III, 353. in relation to achromotrichia, A., III, 824. in soya beans, A., III, 485. infection and, A., III, 222. interrelationships of, C., 183. liver storage of, in rats fed succinylsulphathiazole in purified diets, A., III, 424. physiological function and, A., III, 43. production of, in peas, soya and other beans, A., III, 751. public health and, A., III, 353. relation between, A., III, 672. requirement of, for excectomised rats, A., III, 268.for insects, intracellular symbiosis in relation to, A., III, 672. standards for, A., III, 485. synthetic, in nutrition, A., III, 421. er-soluble, crystalline, properties of, A., III, 353. water-soluble, microscopical in sweat, A., III, 547. See also Diet, Nutrition, etc. Vitamin-A, absorption of, effect of atropine on, A., III, 192. effect of concentration on, A., III, 43. from fish-liver oils, A., III, 125. in infantile eczema, A., III, 44. absorption test of, in giardiasis cases, A., III, 671. absorption, storage, and utilisation of, in disease, A., III, 267. alcohol and ester of, separation of, from β-carotene, and their determination, C., 134. alcohol and palmitate, separation of, C., 182. aldehyde, 2:4-dinitrophenylhydrazone, A., II,

338. antithyroidal substances of, A., III, 806. blood. See under Blood.

colour reaction of, with antimony pentachloride, spectroscopy of, A., III, 267. concentrates, effect of, in normal and hyper-

tensive patients, A., III, 244. treatment with, of renal hypertension, A., III, 100.

oncentration, extraction, and fractional separation of, (P.), C., 83. concentration,

content of, in colostrum from high-grade cows, A., III, 602. in colostrum and milk of sheep, A., III,

824. in fætal bovine liver, effect of diet on, A.,

III, 421. in Indian fish-liver oils, A., III, 546.

cyclisation of, A., II, 215. cyclised, constitution of, A., II, 330.

deficiency of, in relation to bone growth and nervous system, A., III, 353. in relation to urolithiasis, A., III, 125.

plasma-carotene content of cattle in relation to, A., III, 267.

determination of, C., 83. by liver-storage test, C., 182.

chromatographic-spectrophotometrically, C., 33.

in blood-plasma, C., 28. and its separation from carotene, C., 126. in butter fat, C., 133, 182.

in fish-liver oils, A., III, 353; C., 83.

in foods, C., 83. in milk, C., 182. in Wisconsin butter, C., 80.

spectrophotometrically, irradiation technique in, C., 181.

Vitamin-A, dietary, for fattening feeder calves and yearlings, A., III. 602. in relation to dark-adaptation time in

pregnancy, A., III, 486.

ectoparasite resistance and, A., III, 546. effect of, on carotenoid and vitamin-A content of eggs, liver, blood, and body fat of hens, A., III, 421.

on dibenzanthracene toxicity in tissues, A., III, 542. on plasma-vitamin-A level, A., III, 824.

effect on, of tocopherol concentrates, A., III,

analysis of, fluorophotometrically, esters. C., 134.

fluorescence of, A., II, 76; C., 33. in bee bread, A., III, 353. in diabetic children, A., III, 751.

in nutrition of Middle population, A., III, 546. in pregnancy, A., III, 486. Tennessee rural

nutrition level of, in Glossop school children, A., III, 43. plasma. See under Blood-plasma.

potency of, in hen's eggs, A., III, 43. reaction of, with montmorillonite clays, A.,

II. 192.

requirements of, clinical study of, A., III, 353. for infants, determined by its concentration in blood, A., III, 44.

for plasma-vitamin-A maintenance in dairy calf, A., III, 422.

in relation to dark adaptation in man, A., III, 601.

resorption of, from placenta, A., III, 198. storage of, in liver, A., III, 421.

supplements of, effect of, on growth, health, and physical fitness, A., III, 266.

treatment with, colour vision in relation to, A., III, 586.

of acne, A., III, 602. of colds, A., III, 671.

utilisation of, effect of phosphatides on, A., III, 43.

effect of vitamin-E on, A., III, 751. See also Carotene.

Vitamin-A2, A., II, 31.

Vitamin-B, complex, additional factors of, in chick diet, A., III, 424.

assay of, with Leuconostoc mesenteroides, A., III, 297.

deficiency of, skin temperatures extremities in cases of, A., III, 751. effect of, on work output, A., III, 267.

in œstrogen metabolism, A., III, 735. requirement of, for insects, A., III, 353.

restricted intake of, effect of, on men doing hard physical work, A., III, 671. treatment with, of mastitis, menorrhagia,

metrorrhagia, and premenstrual tension, A., III, 467.

content of, in autolysed tissues, A., III, 198. in chick embryos during development, A., III, 199.

in foods, A., III, 269.

in organisms of different biological phyla, A., III, 267.

in tissues during development, A., III, 198. deficiency of, A., III, 44.

glucose ingestion in, blood- and lactate-pyruvate ratio after, A., III, 486.

deprivation of, effect of, on rat activity, A., III, 268.

determination of, in purified proteins, enzymes, etc., A., III, 751.

dietary, effect of, on tumour transplants, A., III, 268.

dietary level of, effect of, on metabolism and body composition of rats, A., III, 422.

filtrate factors of, deficiency of, effect on adrenals of, in rats, A., III, 535. group, determination of, microbiologically, C., 83.

enzymic liberation of, from animal and plant tissues, C., 83.

in cell nuclei, A., III, 268 in diabetic children, A., III, 751. in honey, A., III, 44.

Vitamin-B, in milk. See under Milk.

in human tissues, A., III, 267. in rat tissues, A., III, 268. in sweat, A., III, 268.

requirement of, for horses, A., III, 602. temperature in relation to, A., III, 200. sources of, antioxidant activity in, A., III,

intestinal bacterial synthesis as, for rats, A., III, 268.

synthesis of, by bacterial cultures, A., III,

synthetic, inadequacy of, for puppy nutrition, A., III, 48.

treatment with, of heartburn of pregnancy, A., III, 125.

Vitamin-B1, A., II, 86.

amino-acid metabolism and, A., III, 422.

balance of, in rats, A., III, 269.

bee bread and royal jelly as source of, A., III, 354.

content of, in Eleusine coracana, rice, Sorghum vulgare, and whole wheat, A., III, 547.

in wheat germ and germ bread, A., III, 45. deficiency of, blood and urinary thiamin determinations in, A., III, 126.

carbohydrate metabolism in, A., III, 603. physiological disturbances induced by, A., III, 353.

pregnancy toxemia due to, A., III, 486. determination of, C., 33.

in cereals and malt extract, C., 182. in flour, C., 32. effect of, A., III, 44.

on carbohydrate metabolism, A., III, 44.

on plant growth, A., III, 87. on prolan-A excretion, A., III, 45.

on resistance of rats to Nippostrongylus muris infection, A., III, 602.

on urinary histidine excretion, A., III, 752. enzyme destructive to, distribution of, in

fish, A., III, 45. excretion of, in urine of newborn, A., III, 199.

in potatoes, A., III, 269. in yeast, A., III, 502, 503.

supplements of, effect of, on growth, health,

and physical fitness, A., III, 266. synthesis of, A., II, 239.

treatment with, of diabetic neuritis, A., III,

of varicose ulcers, A., III, 13. See also Aneurin and Thiamin.

Vitamin-B₂, bee bread and royal jelly as source of, A., III, 354. effect of, on resistance of rats to Nippo-

strongylus muris infection, A., III, 602. formation of, by yeast, A., III, 293.

in milk, destruction of, photochemically, A., III, 752.

supplements of, effect of, on growth, health, and physical fitness, A., III, 266.

treatment with, of oro-genital syndrome in avitaminosis, A., III, 200. See also Lactoflavin and Riboflavin.

Vitamin-B₄, deficiency of, prevention of, effect of arginine, cystine, and glycine mixtures on, in chick, A., III, 46.

Vitamin-B₆, bee bread and royal jelly as source of, A., III, 354.

determination of, in foods, A., III, 354; C., 84, 134.

See also Pyridoxine.

Vitamin-B₁₀, and its relation to folic acid activity, A., III, 673.

Vitamin-B₁₁, and its relation to folic acid activity, A., III, 673.
Vitamin-B_c, anti-anomic factor, isolation of, in

crystalline form from liver, A., III, 48.

crystalline, influence of, on hæmatopoiesis in chicks, A., III, 487.

Vitamin-C, action of, in living cell respiration, A., III, 674.

adsorption of, A., I, 58.

and its relation to gastrointestinal disturbances, A., III, 201.

apparent, in foods, A., III, 355. ultra-violet light and, A., III, 825. Vitamin-C, bee bread and royal jelly as source of, A., III, 354. carbohydrate metabolism and, A., III, 674. content of, in Mexican vegetables, A., III, 201. decomposition of, by bacteria, A., III, 146. deficiency of, intradermal test for, A., III, physiological disturbances induced by, A., ĬII, 353. determination of, C., 183. in foods, C., 35. photometrically, with 2:6-dichlorophenolindophenol, C., 84. prevention of oxidation in, C., 183. germinating seeds as source of, in human nutrition, A., III, 355. in apples and other materials, A., III, 127. in diabetic children, A., III, 751. in fruit and leaves of Juglans nigra and regia, A., III, 604. in paprika, A., III, 271. in pregnancy in wartime, A., III, 674. intake of, neuromuscular regeneration under different levels of, A., III, 603. nutrition level of, in Glossop school children, A., III, 43. oxidation of, effect of pyrophosphate on, A., III, 548. protective action of, against liver damage, A., III, 35. aromatic relation of. to amino-acid metabolism, A., III, 356. to calcification, A., III, 517. requirement of, for hamsters, A., III, 825. for persons on Bengali diet, A., III, 201. for sick children, A., III, 201. spectrum of, Raman, A., I 142. supplements of, effect of, on growth, health, and physical fitness, A., III, 266. synthesis of, by dairy cows, A., III, 753. in stored apples, A., III, 488. treatment with, of pseudosclerodermia, A., III, 48. See also Ascorbic acid. Vitamin-D, concentration, extraction, fractional separation of, (P.), C., 83. deficiency of, with liver cirrhosis and dyscrasia of calcium and phosphorus metabolism, A., III, 272. detection of, by antimony trichloride reaction, C., 135. determination of, by chick method, C., 85. effect of, on bones and teeth of rats on lowcalcium diet, A., III, 127. on calcium retention, A., III, 271. on glucose-tolerance curve in man, A., III, 52. on teeth of rats on calcium and phosphorus diet, A., III, 675. esterified and free, activity of, A., III, 127. from cod- and tuna-liver oil, effect of, on serum-phosphatase in rachitic infants, A., III, 488. from different sources, efficacy of, for turkeys, A., III, 675. hypercalcæmia production with, A., III, 753. prevention with, of rickets, A., III, 488. requirement of, for children, A., III, 825. response of turkey poults and of chicks to, A., III, 675. supplements of, effect of, on growth, health, and physical fitness, A., III, 266. treatment with, in neuro-muscular dystrophy during pregnancy and labour, A., III, 470. of colds, A., III, 671. of parathyroid tetany, A., III, 464. of rickets, A., III. 675. Vitamin-D2, antirachitic effectiveness of, A., III, 201.

effect of,

III. 42.

III, 201.

toxicity of, A., III, 49.

Vitamin- D_8 , effect of, on calcium and phosphorus metabolism of chick, compared with dehydrotachysterol and vitamin-D₂, A., III, 42. precursors of, antirachitic activity of, in rats, A., III, 127. toxicity of, A., III, 49. Vitamin-E, and its relation to reproduction, A., III, 255. deficiency of, effect of fresh or rancid cod-liver oil in, A., III, 49. in chicks, A., III, 425. in rats, A., III, 128. in rats given succinylsulphathiazole in purified diets, A., III, 128. testicular degeneration in guinea-pigs with, A., III, 538. determination of, biologically, C., 35, 184. in foods, A., III, 273. effect of, on creatinuria due to tri-o-cresyl phosphate poisoning, A., III, 213. on reproduction in dogs on milk diets, A., III, 654. on utilisation of carotene and vitamin-A, A., III, 751. in neurology, A., III, 202. synergism between, and folliculin, A., III, 189. treatment with, effect of, on nervous system in sclerosis, A., III, 102. of interstitial keratitis, A., III, 247. See also Tocopherol, and Wheat-germ oil. Vitamin-H, sulphonamides and, A., III, 126. See also Biotin. Vitamin-K, administration of, maternal, for prevention of hæmorrhagic disease of newborn, A., III, 791. and its synthetic analogues, biological action of, A., II, 103. compounds related to, syntheses of, A., II, 190, 257. function of, in plants, A., III, 515. group, A., II, 103. action mechanism of, A., III, 754. heterocyclic compound with antihemorrhagic activity like, A., II, 199. level of, and its relation to age, A., III, 49. non-quinones of, biological conversion of, into quinones, A., III, 754; C., 184. oxidised part of, in avitaminosis-K, A., III, preparations, effect of, on blood pressure in hypertensive rats, A., III, 527. studies on, A., III, 324. substances like, water-soluble, pharmacology of, A., III, 164. substitute for, water-soluble, in hypoprothrombinæmia prevention in newborn, A., III, 635. synthesis of, effect of p-aminobenzoic acid, execctomy, and succinylsulphathiazole on, in rat intestines, A., III, 425. synthetic, intravenous use of, A., III, 452. See also Menadione, and 2-Methyl-1:4naphthaquinone. Vitamin-K₁, action of, A., III, 355. optically active, A., II, 227. oxide, treatment with, of hæmorrhage, A., III, 717. Vitamin-K2, action of, A., III, 355. Vitamin-K3, antihæmorrhagic effect of, A., III, 717. from maize stigmata, A., III, 355. Vitamin-M, A., III, 46. in relation to folic acid and xanthopterin, A., III, 355. Vitamin-P, in black-current juice, A., III, 783. in rose hips, A., III, 825. in vegetables, stability of, under chemical treatment, A., III, 604. nature of, A., III, 549. fect of, on calcium and phosphorus metabolism of chick, compared with Vitreous state, A., I, 55, 79. Vitreous substances, structure of, A., I, 79. Voges-Proskaner test, modifications of, A., III, dihydrotachysterol and vitamin- D_3 , A., 71. Volcanoes, Kilauea, ejected blocks at, A., I, 232. Vitamin-D., antirachitic effectiveness of, A., solfataric alteration of rocks at, A., I, 294.

Volemitol heptaacetate, A., II, 286.

Volkmann's contracture, early operation for, A., III, 576. Voltage, electronic regulator for, C., 50. Volume, ionic, in dilute solutions, A., I, 169. molecular, constitution and, A., I, 238. Vomicidine-A, tetrahydroxy-, A., II, 241. Vomicine, Emde degradation of, A., II, 239. Vomiting, post-operative, effect of nicotinic acid on, A., III, 682. Vulva, cancer of, A., III, 669. synechias of, in small children, A., III, 112. Vulvovaginitis, senile, treatment of, æstrogenic ointment, A., III, 409. treatment of, with cestrogens in children, A., III, 468.

Walnuts, extracts of, preparation of ascorbic acid from, A., III, 548. hulls, ascorbic acid in, A., III, 855. War wounds. See under Wounds. Warfare, chemical, A., III, 685. gases for. See under Gases. Warfare gases. See under Gases. Wash-bottle, for delivering predetermined volumes of liquid, C., 144. Wasps, parasitic. See Habrobracon. Wassermann reaction, A., III, 220. Water, absorption of, by materials, measurement of, A., I, 199. blow-down and boiler-feed, conditioning control, and softening of, C., 1. body, balance of, disturbances in, on removal of rat adrenal medulla, A., III, 730. McClure-Aldrich test of, A., III, 357. change of, thiourea as measure of, A., III, 349.disturbances in, and electrolyte balance, A., III, 325. boiler, and boiler-feed, determination in, of oil, C., 1. distillates, conductivity of, for determination of purity, C., 57. boiler-feed, alkalinity of, determination of, volumetrically, C., 57. detection in, of sugar, apparatus for, C., 57. determination in, of oxygen, C., 1. bound, heat of fusion method for, A., III, 763. chlorination of, C., 39.

control of, C., 38. condensation of, on metal surfaces, A., I, 32. de-aerated, determination in, of oxygen, C., depolarisation by, of Rayleigh rays, A., I, 213.

distillation of, separation of oxygen isotopes by, A., I, 291. distilled, hot, reservoir for, C., 207. diuresis and intoxication by, in relation to

adrenal cortex, A., III, 731. drinking, analysis of, bacteriologically, C., 89.

determination in, of chlorides, C., 38. of fluorides, C., 138. fluorides in, removal of, A., III, 485.

drinking of, pattern of, in dogs, A., III, 550. drops, light absorption by, A., I, 29. light scattering by, A., I, 98. light transmission by, A., I, 237.

rupture of, falling on liquid surfaces, A., I, 269. electrolysis of, A., I, 178.

theory of, A., I, 176.

evaporation of, effect of oil films on, A., I, 12. evaporation rate of, A., I, 171.

excretion of, in normal and adrenalectomised cats after water or salt ingestion, A., III,

fresh, plankton and tripton in, A., III, 693. preparation of, by salt distillation, A., I, ground, Los Angeles, composition of, A., I,

257. hard, film formation by, on glass surfaces,

C., 198. pH and oxygen in, diurnal fluctuation of, A.,

Water, inland, osmotic regulation and faunas of, A., III, 194.

intoxication by, effect of cortin-like material in urine on, in adrenalectomised rat, A., III, 340.

endocrine factors in, A., III, 535.

in relation to adrenal and thyroid function, A., III, 728.

isotopes of, in minerals and rocks, A., I, 46. lake, Beer's law and organic matter in, A., I,

Blue, Kandersteg, supply to, A., I, 293. chemistry of, and periodicity, A., I, 159. Géronde, A., I, 293. phytoplankton

pH and oxidation-reduction potential of, A., I, 46.

North East Wisconsin, chlorophyll content of, A., III, 380.

Vilas Co., Wisconsin, limnology of, A., I, 160.

W. Kasakhstan, boron content of, A., I, 293.

Wisconsin, surface tension of, A., I, 36. loss of, in adults in subtropical climate, A., III, 497.

Matzesta, age and radioactivity of, A., I, 69. mine, cobalt in, A., I, 46.

mineral natural, catalytic action of, A., I, 88. molecules, diameter of, A., I, 166.

natural, activation of, with formation of micro-crystals, A., I, 181.

determination in, of fluorides, colorimetrically, C., 39.

of organic compounds, photometrically, C., 186.

Tartar S.S.R., radon in, A., I, 91. oil-field, Frio formation, Texas Gulf Coast,

A., I, 207. pressure-area relations of films on, A., I, 151,

proton conduction in, A., I, 87.

purification of, for culture media, C., 189.

quality of, tests for, C., 38. rain, Grignon, magnesium in, A., I, 256.

Paris, calcium and magnesium in, A., I,

river, Marne, bacteriophages in, A., III, 700. Rhône, in relation to Géronde lakes, A., I,

Ystwyth, Cardiganshire, zinc-pollution of, A., I, 256.

sampling of, bottle for, C., 88.

sea, acoustical tables for, A., I, 197.

chemistry of, A., I, 184. coloration of sulphuric acid by, A., I, 257. conductivity measurements of, A., I, 112.

apparatus for, C., 88. density of, refractive index in relation to, C., 138.

determination in, of gases, C., 186.

evaporation of, in relation to meteorological factors, C., 138.

Kar-Bogas-Gol, salt deposits from, A., I,

plankton and tripton in, A., III, 693.

softened, determination in, o compounds, tables for, C., 39. alkaline of effect of, on fish, A., III, 745.

solubility of, in liquid carbon dioxide, A., I,

spring, hot, boron in, at Tokaanu, Lake Taupo, A., I, 24.

structure of, A., I, 145. in solutions, A., I, 169.

subterranean, Tartar Republic, geochemistry of, A., I, 69. sulphide, Polaspa-Krasnokamsk anticlinal,

Ā., I, 91.

supply, analysis and treatment of, in war time, C., 38.

Barcelona, salinity of, A., I, 159. distilled, C., 57.

surface tension of, A., I, 166. triple point of, A., I, 8.

vapour, condensation nuclei from, electron microscopy of, A., I, 94. reaction of, with carbon, A., I, 20.

Water, volcanie, Copahue, pentathionic acid in, A., I, 134.

well, sodium sulphate, Levshino, A., I, 293. Water analysis :-

analysis of, laboratorium for, C., 38. Lower Don district, A., I, 69.

of underground lakes, A., I, 46. detection in, of coliform bacilli, lauryl sulphate-tryptose broth for, C., 39. of lead, C., 109, 158.

detection of, in air, (P.), C., 47.

in fuel oils, lubricating oils, etc., C., 197. determination in, of aluminium and iron, C., 39.

of bromine and chlorine dioxide, C., 138. of calcium carbonate scale deposits, C., 107. of carbon dioxide, C., 156.

of chloramine and chlorine, C., 138.

of lead, C., 89. of oxygen, C., 88, 89, 159.

of phosphates and silica, with photoelectric absorptiometer, C., 138.

of residual chlorine, C., 38.

of silicic acid, colorimetrically, C., 2. of sodium, C., 39.

of solids, feeder for evaporation in, C., 138. of sulphates, A., I, 69; C., 2, 39.

of tannins, C., 187. determination of, chloride, C., 168. acetylsulphanilyl

in coal and coke, C., 67.

in minerals and rocks, C., 16.

in salts, C., 1.

in skin, and its distribution, C., 79. in soils, C., 89.

in tung fruit, C., 73.

Waterhouse-Friderichsen syndrome, A., III, 187. associated with meningococcal septicæmia, A., III, 589.

hepatorenal failure in, A., III, 534. Waterproof fabrics. See under Fabrics.

Waves, high-frequency, effect of, on animals and bacteria, A., III, 837.

radio, absorption and refraction of, in atmosphere, A., I, 238.

sinusoidal thermal, propagation of, in heterogeneous media, A., I, 273.

spherical, theory of, A., I, 140. supersonic. See Waves, ultrasonic.

ultrasonic, absorption of, in viscous liquids, A., I, 55.

apparatus for, A., I, 287.

velocity of, in aqueous solutions of organic liquids, A., I, 33.

Wave functions, atomic, for elements lithium to neon, A., I, 264.

Wave mechanics, spectral resolution in, A., I, 115.

Wax, determination of, in paper-sizing products, C., 171.

Weasels, moult control and coat colour changes

by lighting, A., III, 648. Weevils, environmental factors and fertility in,

infesting stored grain, A., III, 252.

Weights, correction of, to vacuum, nomograph for C., 208.

molecular. See Molecular weights. Weil-Felix reaction, A., III, 617.

suspensions for, A., III, 843.

Weinschenkite, Virginia, A., I, 259.

Welds, cracks and defects in, detection of, by

illumination at an angle, C., 98. Wetting, spreading and, A., I, 133. Whales, humpback, A., III, 569.

Wheat, adsorption by, of hydrocyanic acid, C., 186.

aneurin in, A., III, 269.

on, A., III, 433.

carbon dioxide output of, A., III, 853. conditioning of, biochemistry of, A., III, 311.

determination in, of aneurin, C., 80. of ethylene oxide, C., 129.

germination of, effect of X-rays on, A., III,

growth of, effect of X-rays on, A., III, 313. kernels, ripening of, enzyme action and respiration in, A., III, 376. powdery mildew infection of, effect of light Wheat, respiration of, during germination, A., III, 308.

whole, vitamin- B_1 content of, A., III, 547. Wheat bran, determination of, in wheat grey

shorts, C., 129. Wheat germ, chemistry of, A., III, 783.

etiolated, ascorbic acid and carotene formation in, A., III, 705.

carotenoid and chlorophyll formation in, A., III, 705.

vitamin- $B_{\rm I}$ content of, A., III, 45.

Wheat-germ oil, constituents of, A., III, 315. See also Tocopherols and Vitamin-E. Wheat plants, anion-cation balance in, A., III,

bleeding and movement of sap in, A., III, 440. embryo, dehydrogenase of, A., III, 285. infection of, by Erisiphe graminis tritici, A.,

III, 87. inoculation of, with Fusarium culmorum and

Helminthosporium sativum, A., III, 783. leaves, carbohydrates in, A., III, 315.

melanism in, A., III, 439. mineral nutrition of, in relation to fertilisers,

A., III, 308.

roots, respiration of, effect on, of fumaric and maleic acids, A., III, 439.

starch content of, A., III, 88.

vernalised, enzyme action in, A., III, 154. Wheat products, absorption by, of ethylene dichloride, C., 129.

Wheat viruses, mosaic, winter, protein preparation from, A., III, 622.

Wheatgrass, bluebunch. See Agropyron spicatum.

White spirit, determination in, of aromatic hydrocarbons, C., 20.

Whooping cough, effect of fever on, A., III, 75. hyperimmune sera against, A., III, 698.

immunity and susceptibility to, test for, using pertussis agglutinogen, A., III, 372.

skin tests for, A., III, 508. treatment of, with diphtheria toxoid, A., III, 437.

See also Pertussis.

Widman-Stoermer reaction, effect of substitution on, A., II, 25.

Wines, analysis of, official, C., 129. determination in, of calcium and magnesium, C., 129.

of chloroacetic acid, C., 32.

of glycerol, C., 32. yeast and yeast-press, detection of, C., 80.

Wires, fine, heat capacity of, C., 100. Wireworms, behaviour, humidity, and moisture of, A., III, 260.

Wohler, Friedrich, and his American pupils, A., I. 207.

β-Wollastonite, structure of, A., I, 79.

Women, college, physical measurements of, A.,

physical and psychological study of, employed on fine work, A., III, 582.

young, copper requirement and metabolism of, A., III, 420.

Wood, coniferous, nitrogen content of, A., III, 83.

delignification of, by sulphite process, origin of, A., I, 133. density of, C., 18.

determination in, of lignin, C., 24. testing of, with X-rays, C., 56.

treatment of, with boric acid, to render immune from attack of powder post borer, C., 18.

with sodium chlorite, A., II, 244

yeast growth-substances in, A., III, 88. Wood liquors, hydrolysed, determination in, of furfuraldehyde, C., 169.

Wood pulp, determination in, of lignin, C., 24. determination of fibres per gram of, C., 24.

Woodlice, behaviour of, A., III, 261. Woodruffia metabolica, nuclear reorganisation in ciliate in, A., III, 449.

Wood's metal, electric double layer on, A., I, 106. Wool, acetylation and methylation of, A., II,

283.

Wool, cystine disulphide linkages in, action of sulphites on, A., II, 250. felting of, C., 119.

scoured, determination in, of vegetable material, C., 25.

sheep's, stringy, in relation to copper deficiency in Western Australia, A., III, 352.

Wool fibres, new and reclaimed, wearing tests on

fabric blends of, C., 71.

Work, capacity for, in horses, oxygen pulse index of, A., III, 283.

recording apparatus for, in rats, A., III, 685.

Worms, earth-, visceral nervous system of, A., III, 345, 647. hook. See Ancylostoma caninum.

parasitic, effect of, on secretory function of stomach and small intestine, A., III, 595. pin. See Enterobius vermicularis.

railroad, South American. See Phryxothrix. wire-. See Wireworms.

Worts, analysis of, by formol titration, C., 178. brewery, analysis of, C., 79.

determination in, of carbohydrates, C., 128. turbidity measurement of, C., 179.

turbidity removal and measurement of, C., 179,

Wounds, contaminated, treatment of, with sulphanilamide and sulphathiazole, A., III,

cutaneous, effect on, of cell-growth-activating

tissue extracts, A., III, 541. healing of, effect of cell growth-promoting tissue on, A., III, 660.

in mouse extremities in relation to nerve supply, A., III, 521.

sutured, tensile strength of, A., III, 259. epidermis of, regenerating, mitotic activity in, rate and periodicity of, A., III, 259. granulating, production of, A., III, 347.

gunshot, of innominate artery, A., III, 172 head, from gunshot, acute stage of, A., III,

healing, enzymes of, A., III, 289. healing of, delayed, disruption and, rôle of allergy in, A., III, 818.

effect on, of a-[2:4-]dinitrophenol and thyroid, A., III, 818.

of surrounding tissues, A., III, 521. red blood cell constituents of value in, A., III, 321.

rôle of creatine in, A., III, 660.

use of adult animal tissue extract in, A., III, 818.

infection of, A., III, 76.

sulphonamides and, A., III, 55. with Pasteurella septica, A., III, 847.

treatment of, casein in, A., III, 557. effect of substances on, A., III, 685. sulphathiazole gauze in, A., III, 55. with sulphonamides, A., III, 359, 492, 758. with zinc peroxide, A., III, 213.

war, infection of, anaerobic, in Middle East, A., III, 371.

treatment of, with penicillin, A., III, 679. See also Trauma.

Writing, lever for, C., 56.

on china and glass, C., 56.

Wurtz-Fittig reaction, A., II, 207. Wnrtzite, heat of transformation of, to sphalerite, A., I, 282.

X.

X-Rays. See X-Rays. Xanthaline. See Papaveraldine.

Xanthation, A., II, 122. Xanthene-9-carboxylic acid, \$\beta\diethylaminoethyl ester, hydrochloride, A., II, 16.

esters, anæsthetic and spasmolytic action of, A., III, 682.

Xanthbydrol, condensation of, with heterocyclic compounds containing active NH groups, A., II, 239.

with hydroxyquinoline, A., II, 239. detection of sulphonamides with, A., II, 156.

Xanthic acid, potassium ethyl ester, as reagont in analysis, C., 105.

Xanthines, tissue action of, A., III, 281. Xanthine-oxidase. Sec under Oxidase.

Xanthium pennsylvanicum, flower initiation in, A., III, 84.

a-Xanthogenopropionic acid, resolution of, A., II, 290.

(+)-Xanthogenopropionic and its acid. strychnine salt, A., II, 290.

Xanthoma diabeticorum, lipin metabolism in

relation to, A., III, 275.

Xanthomatosis, "agnotogenic," of spleen. See under Spleen.

idiopathic. See Hand-Schüller-Christian discase.

Xanthone, spray residues of, on apples, analysis of, C., 90.

Xanthophyll, separation of, from grass and silage, C., 90.

Xanthopinacol, pyrolysis of, and its derivatives A., II, 271.

Xanthopterin, in relation to folic acid and vitamin-M, A., III, 355. preparation of, A., II, 350.

Xanthoxylum acanthopodium, fruits toxicology of, A., III, 210.

1-Xanthylbenziminazolone, A., II, 239.

1-Xanthylbenziminazolthione, A., II, 239. 4-hydroxy-, 3-Xanthyl-2:8-dimethylquinoline, A., II, 239.

3-Xanthyl-2-methylquinoline, 4-hydroxy-, A., II, 239.

4-Xanthyl-4-methylquinoline, 3-hydroxy-, A., II, 239.

5-Xanthyl-4-methylquinoline, 6- and 8-hydroxy-, and 2:7-dihydroxy-, A., II, 239.

8-Xanthyl-4-methylquinoline, 5-hydroxy-, A., II. 239.

3-Xanthyl-4-quinazolone, A., II, 239. N-Xanthylsulphonamides, A., II, 156.

Xenon, spectrum of, magnetic dipole transitions in, A., I, 261.

Xenopus, as assay animal for gonadotropic hormones, A., III, 190. breeding of, A., III, 410.

Xenopus lavis, egg-extrusion reaction of, effect of illumination on, in frog test for pregnancy, A., III, 738.

gonadotropic action of deoxycorticosterone acetate in, A., III, 341.

reaction of, to human pregnancy serum, A., III. 655.

a-p-Xenylacetic acid, alkylamino-ester hydrochlorides, A., II, 15.

4-o- and -p-Xenylaminopyrimidines, 2-amino-, A., II, 349.

a-p-Xenyl-n-butyrio acid, and its ester hydrochlorides, and a-hydroxy-, A., II, 15.

a-p-Xenyl-n-hexoic acid, and a-hydroxy-, A., II, 15.

N-p-Xenylmethylethylenediamine, dihydrochloride, A., II, 366.

a-p-Xenylpropionic acid, and its ester hydrochlorides, and a-hydroxy-, A., II, 15.

a-p-Xenyl-n-valeric acid, and its ester hydrochlorides, and a-hydroxy-, A., II, 15.

Xerophytes, halophytes, and hydrophytes, A., III, 227.

Xiphophorus, pigments of, gene-controlled, chemistry of, compared with other tropical fishes, A., III, 194.

Xylem, permeability of vessels of, A., III, 226.

Xylene, dispersions in, of calcium carbonate and of carbon, effect of surface-active agents on, A., I, 247.

o- and p-Xylenes, alkylation of, A., II, 188. Xylenols, p-nitrobenzoates of, A., II, 294.

m-4-Xylenol, condensation of, with isopropyl

chloride, A., II, 367.
m-5-Xylenol, 2-chloro-, condensation of, with ethyl acetoacetate, A., II, 302.

Xylenoxy-acids, growth-substance properties of, A., III, 442.

m-Xylidines, inhibition of resonance in, A., I, Xylidinediazidocopper, A., I, 290.

4-m-2'-Xylidinopyrimidine, 2-amino-, A., II,

Xylitol, crystalline, new form of, A., II, 1 D-Xylonyl chloride, tetraacetate, A., II, 214.

Xyloquinone, effect of, in dogs, normal and those with neurogenic hypertension, A., III, 577.

p-Xyloquinone, dibromo-, reaction of, with sodiomalonic ester, A., II, 54. D-Xylose, tetra-p-benzeneazobenzoate, A., II, 6.

aldehydo-D-Xylose, tetraacetate, A., II, 214. 4-d-Xylosidamino-5-(2':4'-dichlorobenzeneazo)-

2-methylpyrimidine, 6-amino-, and 4-triacetyl derivative, A., II, 350. 9-d-Xylosidamino-2-methylhypoxanthine, A., II,

350. 6-d-Xylosidamino-2-methylpurine,

6-triacetyl derivative, A., II, 350. 4-d-Xylosidamino-2-methylpyrimidine, 6-amino-,

A., II, 59. 4-d-Xylosidamino-2-methylthiopyrimidine, 6-amino-, 6-acetyl derivative and picrate, A.,

II, 59. 4-d-Xylosidamıno-5-p-nitrobenzeneazo-2methylpyrimidine, 6-amino-, A., II, 350.

9-d-Xylosido-2-methyladenine, A., II, 350. m-5-Xylylarsonic acid, and its derivatives, A., II,

N-m-Xylyl-NN'-diethylcarbamide, A., II, 255.

N-m-4-Xylyl-N'N'-diethylsulphamide, A., II,

N-m-4-Xylyl-N'N'-dimethylsulphamide, A., II,

N-m-4-Xylyl-N-ethylcarbamide, A., II, 255. p-3-Xylylmalonic acid, 6-bromo-2:5-dihydroxy-, diacetyl derivative, diethyl ester, A., II, 54.

 β -m-5-Xylylpropionic acid, A., II, 339. δ -p-Xylyl-n-valeric acid, A., II, 339.

Υ.

Yam beans. See Pachyrrhizus erosus.

Yeast, acetic acid degradation by, in presence of malonic acid, A., III, 369.

alkali-hydrolysable phosphorus compound in, III, 292.

assimilation and oxidation by, A., III, 70. autolysed, in treatment of anæmia, A., III, 57š.

baker's, aneurin utilisation of, A., III, 769. dried and fresh, metabolism of, fluoride inhibition of, A., III, 143.

pyruvic acid decomposition by, A., III, 769. respiration of, effect on, of azide, carbon monoxide, and cyanide, A., III, 70.

baker's and brewer's, effect on, of aneurin, A., III, 503.

biological examination of, report on, C., 129. brewer's, as supplement in industrial lunch, A., III, 125.

microbiology of, C., 129. dehydrogenase of, effect of metallic salts on,

A., III, 292. detection and determination in, of nucleic acids, C., 137.

determination of carbon dioxide formed by. C., 42.

dipeptidases of, A., III, 287, 839.

co-enzymic factors from, A., III, 499. dried, Bergin wood-sugar, amino-acid content

of, A., III, 417. dried and living, fermentation by, and by

maceration juice, A., III, 768.

effect on, of antiseptics, A., III, 560. of carcinogenics, A., III, 692. of X-rays, A., III, 497.

enzymes of, action of, on pyruvic acid, A., III, 433.

fat formation by, A., III, 433.

fermentation by, effect of salts on, A., III, lactic acid formation in, A., III, 292. fermentation and respiration of, effect of

B-alanine on, A., III, 842. glucan of, A., II, 8.

Yellow fever, virus, immune response to, A., III,

inoculation with, infection after, A., III,

and its degradation products, constitution of,

methiodide, physiological activity of, A., III,

spectrum of, absorption, ultra-violet, A., I,

sympathicolytic activity of, effect of acetyl-

sulphate, and its hydrochloride, A., II, 63.

Young's modulus, determination of, C., 46.

separation of, from erbium, A., I, 157.

antidiuretic action of, A., III, 591.

and sympatholytic

2:4-dinitrophenyl-

152.

79. Yobyrone, A., II, 63.

A., II, 62.

191.

Yohimbenone, A., II, 63.

Yohimbine, adrenolytic action of, A., III, 759.

ation on, A., III, 832.

Yohimboaic acid. A., II, 63.

A., I, 139.

95

39.

A., I, 11.

with titanium, rolled, A., I, 244.

Yeast, growth of, culture media for, magnesium and phosphate in, A., III, 770. effect on, of β-alanine, in presence of β-aminobutyric acid, A., III, 842. of β -alanine derivatives, A., III, 433. of amino-acids, A., III, 143. of biologically-active substances, A., III, of carcinogens, A., III, 368. growth and heat-sensitivity of, effect of trehalose on, A., III, 502. growth and respiration of, effect of phenylmercuric nitrate and yeast extracts on, A., III, 142. growth-substances for, from sugars, A., III, 293. in wood, A., III, 88. hybridising of, A., III, 143. apoYohimbine methiodide hydrate, A., II, 63. in nutrition, A., III, 545, 568. a-isoYohimbine, A., II, 63. e-Yohimbine, A., II, 63. melibiose-fermenting, detection of, A., III, nicotinic acid requirement of, A., III, 293. populations of, enzymic adaptation in, A., III, a-isoYohimboaic acid, A., II, 63. Yohimbol, and its hydrochloride, A., II, 63. pressed, carbohydrate reserve of, A., III, 502. epiYohimbol, and its salts, A., II, 63. alloYohimbone, and its hydrazone, A., II, 63. proteins of, feeding value of, A., III, 670. radiation damage to, effect of cold on, A., III, Ytterbium, spectrum of, K absorption, A., I, red. See Torula rubra. reduction by, of tetrazolium salts, A., III, 515. soil, A., III, 614. spores, staining of, A., III, 503. sterols of, A., II, 78. synthesis of cell material by, A., III, 692.

top, cytochrome-c in, A., III, 292.

тусев.

III, 361.

synthetic diets, A., III, 671. vitamin deficiency of, A., III, 143. vitamin requirements of, A., III, 559.

treatment with, of achromotrichia in dogs on

vitamin-B₁ in, A., III, 293, 502, 503.
See also Candida, Endomyces vernalis,
Sacchomyces, Torula, and Zygosaccharo-

Yeast cells, effect on, of vanadium, A., III, 841. fermentation with, alcoholic, and with zymase systems, A., III, 288, 500.

Yeast extracts, as culture medium, A., III, 294.

Yeast-ribonucleic acid, constitution of, A., II. 85.

Yellow fever, diagnosis of, complement fixation

icterogenic, vaccine, transmission of, to

immunity to encephalitis of, in mice and

in West Africa, birds in maintenance of, A.,

jungle, epidemiology of, in eastern Colombia, A., III, 438.

prevention of, in Colombia, vaccination for,

vaccination against, in relation to jaundice,

vaccine, allergic reaction induced by, A., III,

virus, adaptation of, to young chickens, A..

use of, hepatitis and icterus after, A., III,

antigenicity of, after subcultures in immune

17D, effect of, on rhesus monkeys, A., III,

electrophoresis of, A., III, 503. growth factor in, A., III, 147.

under Depolymerases.

test in, A., III, 438.

monkeys, A., III, 80.

in Africa, A., III, 304.

III, 850.

A., III, 439.

A., III, 621.

305.

622.

111, 80.

sera, A., III, 512.

Yeast-mannan. See under Mannans.

Yeast-nucleic acid, depolymerases for.

horses and swine, A., III, 850.

effect of, on anæsthetic action of cocaine, A.,

Yttrium, isotopes, from uranium disintegration,

radioactive, from uranium fission, A., I,

Zanthoxylum. See under Xanthoxylum. Zeaxanthin, stereochemistry of, A., II, 219. Zeolites, effect of, on growth of micro-organisms, A., III, 68. formation of solid solutions of, A., I, 170. solid solutions of type of, thermodynamics of, A., I, 278. Zephyranthes texana, alkaloids of, A., III, 708. Zimmermann reaction, C., 78. Zinc, crystals, bending of, stress development in, A., I, 55. magnetic susceptibility of, A., I, 217. recrystallisation in, A., I, 55. resistance of, in magnetic field, A., I, 6. isotopes, radioactive, elimination of, in bile, and duodenal and pancreatic juice, after administration in dogs, A., III, 213. γ -rays from, energy of, A., I, 76. plating-baths for, electro-analysis of, with iron anode, C., 16. specification for, C., 196. vapour pressure of, over aluminium-zinc alloys, A., I, 33. Zinc alloys, high-purity, determination in, of cadmium, copper, and lead, C., 57. with aluminium, precipitation from, A., I, 11. with aluminium and magnesium, analysis of, spectroscopically, C., 108. with aluminium, magnesium, and manganese, A., I, 9. constitution of, A., I, 33. with indium, A., I, 244. with mercury, determination in, of mercury, C., 7. with tin, eutectic, superconductivity of, A., I,

superconducting, magnetic properties of,

Zinc compounds, in pancreas of normal and

hypophysectomised dogs, A., III, 342.

Zinc compounds, prolongation by, of hormone action, in man, A., III, 60. Zinc ammonium, potassium, chromates, basic, A., I, 230. ferrites, extractability, for reducibility of, C., 107. and sodium formation, and formation and extraction of, A., I, 159. hydroxyfluorides, A., I, 90. hydroxyhalides, basic, A., I, 43. perniobate, lattice constants of, A., I, 195. oxide, compounds of, with sodium oxide, A., I, smokes, use of, in electron wave-length calibration, C., 50. peroxide, treatment with, of Clostridium welchii infection, A., III, 829. of wounds, A., III, 213. phosphide, analysis and stability of, C., 59. stibnate, crystal structure of, A., I, 216. sulphide, luminous, excitation of, A., I, 192. pertantalate, lattice constants of, A., I, 195. Zinc organic compounds, complex, with glycine, A., I, 67. Zinc alkyls, from sec.-alkyl halides, A., II, 356. bisnicotinylacetonate, a-bromocamphor-π-sulphonate, A., II, 377.
 di-sec.-butyl, A., II, 356. mercurithiocyanate, crystal structure of, A., I, 221. nicotinylacetopate, A., II, 377. Zinc detection and determination :detection of, in presence of cobalt, iron, nickel, and zinc, C., 162. with benzoin, C., 6, 107. determination in, of antimony, C., 63. determination of, in aluminium alloys containing copper, C., 59. in ammonium and zinc chloride solutions, C., 6. in biological materials, after extraction with di-β-naphthylthiocarbazone, C., 91. in brass, spectrochemically, C., 6. in cadmium, C., 60. in copper-smelting-plant materials, spectrographically, C., 59. in cyanide brass-plating baths, C., 155. in magnesium alloys, C., 6, 155. in ores, with mercury thiocyanate, C., 59. in organic materials, C., 147. in presence of cadmium, cobalt, copper, and nickel, C., 154. in roasting products from zinc minerals, C., 107. in silicon brass, C., 62. titrimetrically, C., 155. Zinc anodes. See under Anodes. Zinc ores, flotation concentrates of, determination in, of copper, C., 58. Zircon, Otago, A., I, 208. Zirconium tribromide, preparation of, with hot-cold tube, A., I, 230. dioxide, specific heat of, at low temperatures, A., I, 168. Zirconium determination :determination of, in alloy steel, C., 9. Zoogeography, Wallace's line in light of, A., III, 570. Zoology, genera, species, and subspecies in, criteria for, A., III, 517. Zygodontomys, laboratory adaptation of, and its susceptibility to yellow fever, A., III, 702. susceptibility of, to influenza viruses, A., III, 849. Zygosaccharomyces, conjunction of, chemical control of, A., III, 692. culture and metabolism of, A., III, 292.

Zygosaccharomyces acidifaciens, A., III, 292. Zymogens, secretion of, effect of nervous and

Zymohexase, microscopical demonstration of, in

hormonal stimulation on, A., III, 345.

muscle, A., III, 320.